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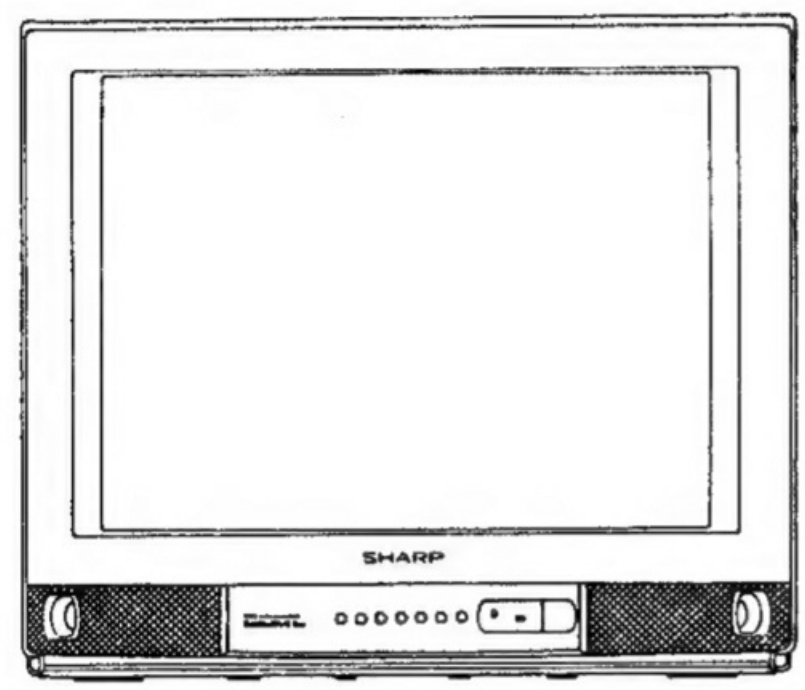
SHARP 21DN1 SERVICE MANUAL



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SHARP-05518

SHARP

SERVICE MANUAL
维修手册

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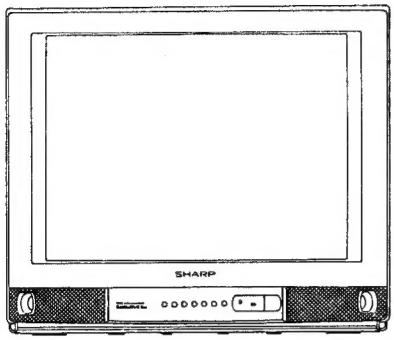

COLOUR TELEVISION
彩色电视机
Chassis No. SP-30

MODEL 型号 **21DN1**

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified should be used.

为了用户安全起见(根据一些国家的安全规程的需要)，应将电视机保持于最初的状态，而且只能使用与指定物相同的部件。

FEATURE

- CATV (Hyper Band) Ready
- One Chip Microprocessor Voltage Synthesizer System
  - 39 Channels Programming System
  - Channel Skip Preset System
  - Last (Channel / Volume / Power / User Control / Fine Tuning) Memory System
- Full Auto Search Tuning System
- Fine Tuning Adjustable with Remote Control
- Audio Output 8W + 8W (PMPO)
- AV Input Terminal
- Blue Back
- Direct Access Remote Control
- 21 System Wide Compatibility
- Wide Range Chopper Regulator System

主要功能

- 有线闭路电路可并路状态
- 单片微电脑电压合成器系统
  - 39频道编程系统
  - 频道跳选设定系统
  - 最终(频道/音量/功率/用户使用控制器/微调)记忆系统
- 全自动寻台调谐系统
- 可用遥控器控制的微调功能
- 音响功率输出8W＋8W(PMPO)
- 声象信号输入插孔
- 蓝色背景功能
- 遥控器直接存取功能
- 21制式国际线路兼容
- 广域斩波调节器系统

WARNING

The chassis in this receiver is partially hot. Use an isolation transformer between the line cord plug and power receptacle, when servicing this chassis. To prevent electric shock, do not remove cover. No user — serviceable parts inside. Refer servicing to qualified service personnel.

警　告

该电视机底盘的有些部分通电。当维修本机底盘时，请在电源线插头和电源插座之间使用隔离变压器。为了防止电击的危险，不要去拆下机盖。在里面的部件，不是使用者所能维修的，必须委托够格的维修人员来进行维修。

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SPECIFICATIONS

Convergence	Self Converging System
Focus	Quadra-Potential Electrostatic
Sweep Deflection	Magnetic
Intermediate Frequencies	
Picture IF Frequency	38.9MHz
Sound IF Carrier Frequency	
6.5 MHz	32.4 MHz
6.0 MHz	32.9 MHz
5.5 MHz	33.4 MHz
4.5 MHz	34.4 MHz
Colour Sub-Carrier Frequency	
PAL/NTSC	34.47 MHz
SECAM	34.494/34.65 MHz
NTSC	35.32 MHz
Power Input	110 — 240V AC 50/60Hz
Power Consumption	98W
Audio Power Output Rating	3.1W + 3.1W (at Max.)
Speaker	
Size	5 cm × 9 cm × 2 pcs.
Voice Coil Impedance	16 ohms at 400Hz
Aerial Input Impedance	
VHF/UHF	75 ohm Unbalanced
Receiving Channels	
PAL-B/G, SECAM-B/G	
VHF	E2 thru E12
UHF	21 thru 69
CATV	S1 thru S53, M1 thru M10, S4 thru S41
PAL-D/K, SECAM-D/K	
VHF	R1 thru R12
UHF	21 thru 69
PAL-I	
VHF (IRELAND)	B thru J
UHF (U.K, H.K)	21 thru 69
NTSC-M	
VHF (US)	2 thru 13
VHF (JAPAN)	1 thru 12
UHF (US)	14 thru 79
UHF (JAPAN)	13 thru 62
CATV	A-8 thru A-1, A thru W
Receiving Frequency	
VHF	48.25 MHz thru 463.25 MHz
UHF	471.25 MHz thru 863.25 MHz
Dimensions	
Width	542.0 mm
Height	462.0 mm
Depth	470.0 mm
Weight (approx.)	22.0 kg
Cabinet Material	All Plastics

Specifications are subject to change without prior notice.

E-3

规　格

聚焦	自聚焦系统
焦点	平方电位静电焦点
扫描偏转	磁致偏转
中频	
图象中频载波频率	38.9MHz
声音中频载波频率	
6.5MHz	32.4MHz
6.0MHz	32.9MHz
5.5MHz	33.4MHz
4.5MHz	34.4MHz
色彩副载波频率	
PAL/NTSC制式	34.47MHz
SECAM制式	34.494/34.65MHz
NTSC制式	35.32MHz
电源	交流110～240V、50/60Hz
功率消耗	98W
音响额定输出功率	3.1W+3.1W (最大)
扬声器	
尺寸	5cm × 9cm × 2只
音圈阻抗	16Ω (400Hz时)
天线输入阻抗	
甚高频(VHF)/超高频(UHF)	75Ω非平衡式
接收频道	
PAL-B/G、SECAM-B/G制式	
甚高频(VHF)	E2～E12频道
超高频(UHF)	21～69频道
有线电视(CATV)	S1～S53频道, M1～M10频道, S4～S41频道
PAL-D/K、SECAM-D/K制式	
甚高频(VHF)	R1～R12频道
超高频(UHF)	21～69频道
PAL-I制式	
甚高频(VHF)	(爱尔兰): B～J频道
超高频(UHF)	(英国,香港):21～69频道
NTSC-M制式	
甚高频(VHF)	(美国):2～13频道, (日本):1～12频道
超高频(UHF)	(美国):14～79频道, (日本):13～62频道
有线电视(CATV)	A-8～A-1频道, A～W频道
接收频道	
甚高频(VHF)	48.25MHz～463.25MHz
超高频(UHF)	471.25～863.25MHz
尺寸	
宽	542.0mm
高	462.0mm
深	470.0mm
重量 (大约)	22.0kg
机壳	均由塑料而成

上述规格变更之场合，恕不另行通知。

C-3

IMPORTANT SERVICE NOTES

Maintenance and repair of this receiver should be done by qualified service personnel only.

SERVICING OF HIGH VOLTAGE SYSTEM AND PICTURE TUBE

When servicing the high voltage system, remove static charge from it by connecting a 10 k ohm Resistor in series with an insulated wire (such as a test probe) between picture tube dag and 2nd anode lead. (AC line cord should be disconnected from AC outlet.)

1. Picture tube in this receiver employs integral implosion protection.
2. Replace with tube of the same type number for continued safety.
3. Do not lift picture tube by the neck.
4. Handle the picture tube only when wearing shatterproof goggles and after discharging the high voltage completely.

X-RAY

This receiver is designed so that any X-Ray radiation is kept to an absolute minimum. Since certain malfunctions or servicing may produce potentially hazardous radiation with prolonged exposure at close range, the following precautions should be observed:

1. When repairing the circuit, be sure not to increase the high voltage to more than 29.0 kV, (at beam 0 μA) for the set.
2. To keep the set in a normal operation, be sure to make it function on 24.8 kV ± 1.5 kV (at beam 1100 μA) in the case of the set. The set has been factory — Adjusted to the above-mentioned high voltage.
   ∴ If there is a possibility that the high voltage fluctuates as a result of the repairs, never forget to check for such high voltage after the work.
3. Do not substitute a picture tube with unauthorized types and/or brands which may cause excess X-ray radiation.

BEFORE RETURNING THE RECEIVER

Before returning the receiver to the user, perform the following safety checks.

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the receiver.
2. Inspect all protective devices such as non-metallic control knobs, insulating fishpapers, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacity networks, mechanical insulators etc.

保养维修重要注意事项

本电视机的保养只得由专门技术人员进行。

关于高压系统和显象管的保养维修

对高压系统进行保养维修时，先于显象管管座金属部分与第二阳极引线间用绝缘线（诸如测试探针等）串接一只10KΩ的电阻器，以除去残留于高压系统中的静电。（之前，应从电源插座中拔出本机的电源引线插头。）

1. 本电视机显象管为整体内爆防护设计。
2. 为保证本电视机持久使用的安全，显象管的更换必须使用同型号者 。
3. 搬移显象管时，不得倒持其颈部上提。
4. 拆装搬移显象管，必须先用布物等包护荧屏防碎玻璃，并且作完全放电处理后才能进行。

关于X射线

本电视机为无辐射射设计。因此，任何X射线均设计控制于最小绝对极限。然而，在发生故障或保养维修时，过长时间地暴露机芯内部加以放置之场合，便有可能在其近旁产生有害的X射线辐射影响。为此，务请遵循下述预防措施：

1. 维修调整本电视机内部电路时，切勿让其高压超过29.0kV（电子束电流为0μA时）。
2. 为保证本电视机的正常工作，务必保证其高压为24.8kV±1.5kV（电子束电流为1100μA时）的工作条件。该工作条件值在本电视机出厂前已经调试验收。
   ※本电视机一旦经维修调整，可能导致上述工作高压规定值发生偏动。因此，维修调整完毕，务请重新对其高压值进行确认检查。
3. 更换显象管时，不得使用非经认可的、不同厂家、不同型号的显象管，以免产生超过规定标准的X射线辐射的危险。

维修后归还之前

在把维修后的电视机归还给用户之前，务请进行下列的安全检查。

1. 检查电视机中的所有导线的绝缘包皮有无扭折破损之处，于机芯底板和其它金属部件之间有无他物夹杂。
2. 检查电视机中的所有非金属质的控制旋钮、绝缘鱼鳞纸，机壳后盖、调节器和仪器隔室盖罩或屏蔽，电阻—电容隔离网以及机械部件隔离器等保护绝缘装置、器材。

SERVICE ADJUSTMENT

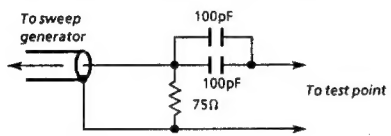
PIF/AFT/AGC ADJUSTMENT

Adjusting Conditions	Adjusting Procedures

1. Tuner IFT Coils

The tuner has been factory preset (no adjustment is needed).

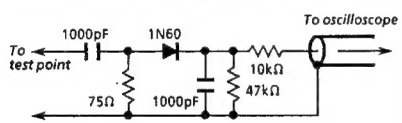
1. Receive VHF high channel (channel-E10) (When such signal is not available, set V_T voltage at 5V in V_H band.)
2. Connect sweep generator's output to the test point of tuner, by using a 75Ω DC cut probe.



Connection Diagram of 75Ω DC Cut Probe.

Note: The sweep generator's probe should be grounded closely to the tuner test point.

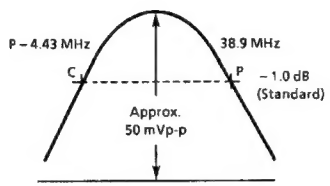
3. Output level of sweep generator: 85 dB
4. Connect response lead (low impedance probe with detector) to TP201 (collector of Q201).



Connection Diagram of Low Impedance Probe (with Detector).

5. PIF AGC:
   Apply DC 4V to TP202 (pin (48) of IC801).
6. RF AGC:
   Apply DC 4V to the tuner AGC terminal.

1. Adjust the tuner IF coils to obtain the waveform as shown figure below.



Adjust so that "P"and "C" are at the same level.

保养调试

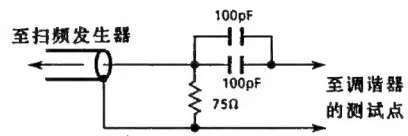
PIF/AFT/AGC的调试

调试条件	调试方法

1. 调谐器IFT线圈

该调谐器出厂前已作预调(无重新调试之必要)

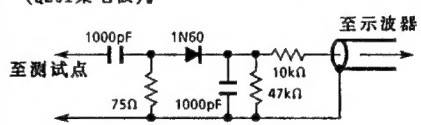
1. 接收VHF高频（频道E10）信号(电视机在无信号接收状态时，设V_T电压于V_H频带的5V)。
2. 用75Ω直流截断探针电路，将扫频发生器输出端连接于调谐器的测试点。



75Ω直流截断探针电路连接图

注意：扫频发生器的接地线必须接地于测试点附近。

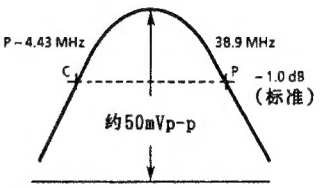
3. 扫频输出电平：85dB。
4. 连接响应引线(检波器的低抗阻探针)于TP201(Q201集电极)。



低抗阻探针（带检波器）电路连接图

5. PIF AGC电压设定：
   加4V直流电压于TP202（IC801的销(48)）。
6. RF AGC电压设定：
   加4V直流电压于调谐器AGC连接端。

1. 调节调谐器IF线圈，以获得下图所示输出波形。



检查“P”及“C”两点是否于相同的电平线上

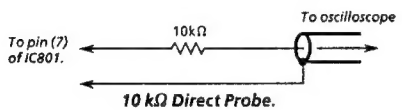
PIF/AFT/AGC ADJUSTMENT (Continued)

Adjusting Conditions	Adjusting Procedures

2. P-Detector Adjustment

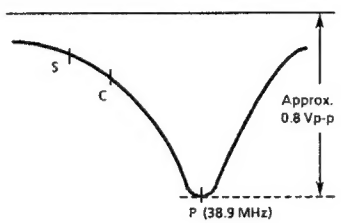
Adjusting Point
☐ T205: P-Detector coil

1. Connect sweep generator's output to TP203 (pin (46) of IC801).
   - Probe in use: 75Ω DC cut probe
   - Sweep output level: 90 dB
2. PIF AGC:
   Apply 4V DC to TP202 (pin (48) of IC801).
3. Have AFT muted (by pressing the preset key to bring in the SEARCH mode).
4. Connect response lead to pin (7) of IC801.
   The response lead in use should be a direct probe with a resistor of 10 kΩ included.



10 kΩ Direct Probe.

1. Adjust T205 so that 38.9 MHz signal is at maximum (± 50 kHz).



* Adjust PIF AGC voltage so that the output waveform is of approx. 0.8 Vp-p.

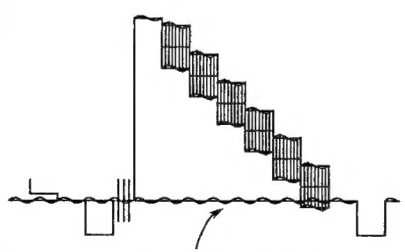
3. AFT Adjustment

Fine Adjustment

Adjusting Point
☐ T205: AFT coil

1. Receive VHF high channel (channel-E12).
   - Signal strength: Over 55dB, Below 80dB
2. Connect the Regulated DC Power Supply to the tuner's V_T (approx. 6V to be applied) to receive channel-E12.
3. Connect oscilloscope to TP401.
   - Oscilloscope range: 0.5 V/div.
   - Sweep time: 20 μsec/div.
   - Synchronization: Horizontal sync.
4. Connect the output of SSG (Standard Signal Generator) to the tuner IF output terminal across a capacitor of 1pF.
   - SSG output: 38.9 MHz ± 5 kHz (non modulated)
   - SSG output level: approx. 85 dB
   * When the preset button is at PRESET position, AFT is turned off.
   * When the preset button is set at NORMAL position, AFT is turned on.

1. Press the preset key to adjust the voltage of the Regulated DC Power Supply until there is no beating in the oscilloscope's waveform.
2. Set the preset button at NORMAL position.
3. Adjust T205 so that no beating is caused at the output waveform.


Finely adjust to make zero the beating

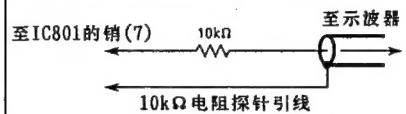
PIF/AFT/AGC的调试(接上页)

调试条件	调试方法

2. P-检波器的调试

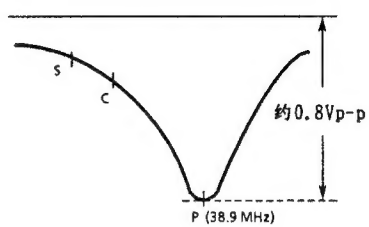
调试点
☐T205:P-检波器线圈

1. 连接扫频发生器输出端于TP203(IC801的销(46))。
   - 使用探针：75Ω直流截断探针
   - 扫频发生器输出端电平：90dB
2. PIF AGC电压设定：
   加4V直流电压于TP202 (IC801的销(48))。
3. 置AFT于静噪状态(触按预设键,使电视机处搜索寻台状态即可)。
4. 连接响应引线于IC801的销(7)。
   该响应引线应为具有10kΩ电阻的探针。



10kΩ电阻探针引线

1. 调节T205，使其信号最大值为38.9MHz (± 50kHz)



*调节PIF AGC电压使其输出电平约达0.8Vp-p。

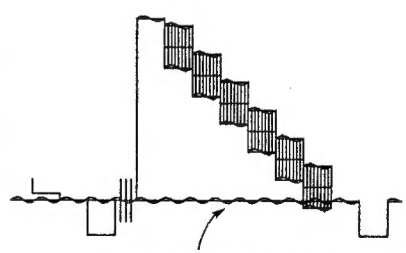
3. AFT调试

微调

调试点
☐T205:AFT线圈

1. 接收VHF高频（频道E12）信号。
   - 信号强度：大于55dB，小于80dB
2. 接直流电源于调谐器V_T端(约加直流电压6V)，以接收频道E12的信号。
3. 将示波器和TP401相接。
   - 示波器测试范围：0.5伏/段
   - 扫频时间：20微秒/段
   - 同步动作：水平同步
4. 通过1pF电容器，并连接标准信号发生器(SSG)的输出端与调谐器的IF输出端。
   - SSG输出频率：38.9MHz ± 5kHz(无调制)
   - SSG输出电平：约85dB
   *设预设键于PRESET位置时，AFT关断。
   *设预设键于NORMAL位置时，AFT接通。

1. 触按预设键，调节直流电源电压，直至示波器上的输出波形表面无差拍出现。
2. 设预设键于NORMAL位置处。
3. 调节T205，使示波器上的输出波形无差拍出现为止。


调节微调使其差拍为零

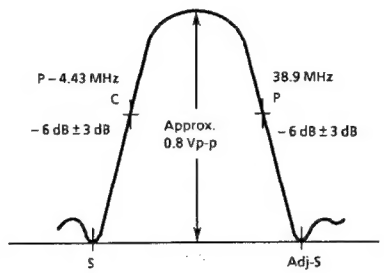
PIF/AFT/AGC ADJUSTMENT (Continued)

Adjusting Conditions	Adjusting Procedures

4. PIF Overall Adjustment

1. Receive VHF high channel (channel-E10).
   If channel-E10 signal is not available, set V_T voltage at 5V in V_H band.
2. Connect sweep generator's output to the test point of tuner.
   - Probe in use: 75Ω DC cut probe
   - Sweep output level: 90 dB
3. Connect response lead to pin (7) of IC801.
   The response lead in use should be a direct probe with a resistor of 10kΩ included.
4. RF-AGC:
   Apply approx. 4V DC to the tuner AGC terminal.
5. PIF AGC:
   Apply approx. 4V DC to TP202.
6. Connect a 120Ω damping resistor in parallel to R215, short C244.
7. Turn off AFT.

1. Adjust IF AGC voltage so that the output waveform is of approx. 0.8Vp-p.
2. Check that the overall waveform is as shown in Figure below.

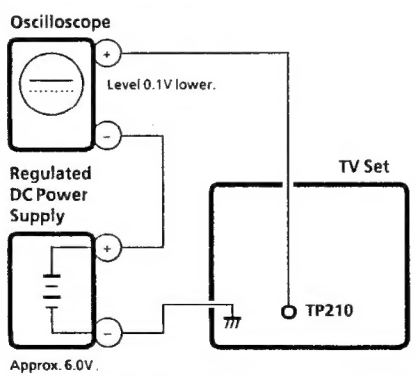


5. RF-AGC Cut-In Adjustment

Adjusting Point
☐ **R248: RF-AGC control**

1. Keep the AGC Cut-in control near the center position.
2. Receive VHF high channel (channel-E12).
   - Signal strength:
     54dB ± 1 dB (with 50Ω open)
3. Connect the oscilloscope to the tuner's AGC terminal (TP210).
   - Range: DC range
   - Voltage: 1 V/div.
   - Sweep: 10 msec./div.
   * Set the Regulated DC Power Supply to approx. 6.0V and turn up the oscilloscope range to 0.1 V/div.

1. Turn R248 to obtain the highest voltage.
2. Turn R248 slowly in the opposite direction until the voltage drops 0.1V lower than the highest level.
3. Change the antenna input signal to 65dB ± 2dB and make sure there is no noise. Turn up the input signal to 90 — 95dB to be sure that there is no cros-modulation beat.



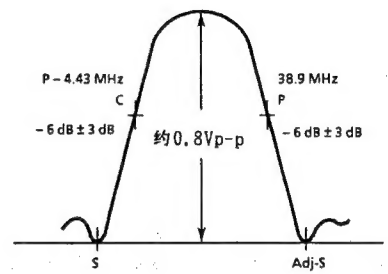
PIF/AFT/AGC的调试(接上页)

调试条件	调试方法

4. PIF全波形的调试

1. 接收VHF高频（频道E10）信号。
   电视机在无该信号接收状态时，设V_T电压于V_H频带的5V。
2. 将扫频发生器输出端与调谐器测试点连接。
   - 使用探针：75Ω直流截断探针
   - 扫频发生器输出电平：90dB
3. 连接响应引线于IC801的销(7)。
   该响应引线应为具有10kΩ电阻的探针。
4. RF AGC电压设定：
   加约4V直流电压于调谐器的AGC连接端。
5. PIF AGC电压设定：
   加约4V直流电压于TP202。
6. 用120Ω的阻尼电阻与R215并连相接，然后将C244短路。
7. 关闭AFT。

1. 调节IF AGC电压，使其输出电平达至0.8Vp-p左右。
2. 确认所得全波形轮廓如下图所示。

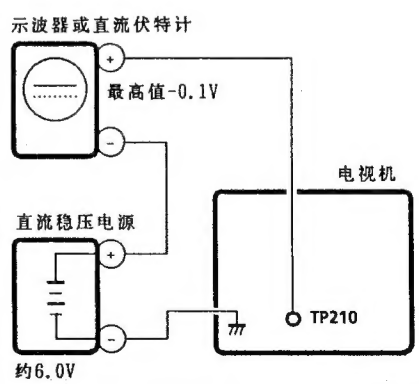


5. RF-AGC接通的调试

调试点
□R248:RF-AGC控制

1. 设AGC接通控制于其中央近旁之位置处。
2. 接收VHF高频（频道E10）信号。
   - 信号强度：54dB ± 1dB（端接50Ω电阻）。
3. 连接示波器于调谐器AGC连线端(TP210)。
   - 测定电压：直流范围
   - 电压范围：1V/段
   - 扫频时间：10毫秒/段
   ＊设直流稳压电源电压于6.0V左右，调示波器测示范围至0.1V/段。

1. 旋转R248，使伏特计读数达至最高。
2. 反方向缓慢旋转R248，让伏特计读数为最高值-0.1V。
3. 将天线输入信号电平调至65dB ± 2dB，并确认其信号输出不带噪声。然后将输入信号电平调至90～95dB，并确认其信号输出波形不带交叉调制拍频。



115V LINE ADJUSTMENT

Adjusting Conditions	Adjusting Procedures
Adjusting Point ☐ **R711: 115V Adjustment Control** 1. Set the R711 to 5/10 before supplying power. 2. Receive "MONOSCOPE PATTERN (channel-E5)" signal. 3. Set Contrast and Brightness controls at MAX position. 4. Connect DC milliammeter to TP602⊖ and TP603⊕. (Full scale: 3 mA) 5. Using the DC milliammeter, check to see that the beam current is between 900 and 1100μA. Note: In other cases than the above, adjust the R420 Sub-Contrast control. 6. Connect Digital voltmeter to TP702.	1. Adjust the R711 until the TP702's voltage becomes 115 ± 0.5V.

115V线路调试

调试条件	调试方法
调试点 ☐R711:115V线路调试控制 1. 输入电源前，先设R711于其中央(5/10)位置。 2. 接收“单象管图案（频道E5）”信号。 3. 设对比度控制和亮度控制于其最大(MAX)位置。 4. 接直流毫安安培计于TP602⊖和TP603⊕。 （测示范围：3mA） 5. 用直流毫安安培计检查电流束是否于900～1100μA之间。 注： 上述之外之场合，调试副对比度控制(R420)。 6. 接数值伏特计于TP702。	1. 调节R711，使TP702的电压达至115V ± 0.5V。

VIDEO/CHROMA ADJUSTMENT

Adjusting Conditions	Adjusting Procedures
1. CRT Cut-off Adjustment	
Adjusting Point ☐ **R853: Red Bias control** ☐ **R859: Green Bias control** ☐ **R865: Blue Bias control** ☐ **T602: Screen control (a part of T602)** ☐ **R857: Green Drive control** ☐ **R863: Blue Drive control** ***Note: Prior to this adjustment, warm up the unit with the beam current of more than 700μA for more than 30 minutes.*** 1. Receive "MONOSCOPE PATTERN (channel-E5)" signal. 2. Make the picture normal. Set Brightness control at 5/10 position and Contrast control at 10/10 position. 3. Set Red bias control at MIN position. Set Green bias control at MIN position. Set Blue bias control at MIN position. Set Green drive control at CENTER position. Set Blue drive control at CENTER position. 4. Set the Screen control at MIN position. 5. Using the remote controller, call the AV mode (no signal). 6. Short TP501.	1. Slowly turn the Screen control clockwise until the horizontal raster appears slightly, and stop it. 2. Here, one of the three colours (red, blue, green) appears first as the Screen control is turned. So, touching off the Bias control belonging to the first colour, use and move the other two controls so that the horizontal raster becomes white. 3. Turn the Screen control counterclockwise until the horizontal raster disappears, and stop it.

视频/色度信号电路的调试

调试条件	调试方法
1．CRT截止的调试	
调试点 ☐R853：红色偏转控制 ☐R859：绿色偏转控制 ☐R865：蓝色偏转控制 ☐T602：画面控制(T602的一部分) ☐R857：绿色激励控制 ☐R863：蓝色激励控制 注意：作此项调试前，先用700μA以上的电子束电流为电视机预热30分钟以上。 1. 接收“单象管图案（频道E5)”信号。 2. 设电视机画面于标准画面状态。 设亮度控制于5/10位置，设对比度控制于10/10位置。 3. 设红色偏转控制于最小(MIN)位置。 设绿色偏转控制于最小(MIN)位置。 设蓝色偏转控制于最小(MIN)位置。 设绿色激励控制于中心(CENTER)位置。 设蓝色激励控制于中心(CENTER)位置。 4. 设画面控制于最小(MIN)位置。 5. 用遥控器呼出AV方式（无信号）。 6. 短接TP501。	1. 顺时针方向缓慢地旋转画面控制旋钮，直至荧屏上微弱地出现水平光栅为止。 2. 画面控制的调节，最初出现的水平光栅泛显红、绿、蓝三色之一。这时，对最初出现的色彩控制不作调节，而对另外两色彩的控制作顺时针方向的调节，荧屏上的水平光栅会变为白色。 3. 反时针方向旋转画面控制旋钮，直至荧屏上的水平光栅完全消失为止。

VIDEO/CHROMA ADJUSTMENT (Continued)

Adjusting Conditions	Adjusting Procedures

2. White Balance and Back Ground Adjustment

Adjusting Conditions	Adjusting Procedures
Adjusting Point ☐ R857: Green Drive control ☐ R863: Blue Drive control ☐ R420: Sub-Contrast control ***Note: Prior to this adjustment, warm up the unit with the beam current of more than 700 μA for more than 30 minutes.*** 1. Receive "MONOSCOPE PATTERN (channel-E5)" signal. 2. Set the Contrast and Brightness controls at MAX position. 3. Connect DC milliammeter to TP602⊖ and TP603⊕. (Full scale: 3 mA)	1. Adjust Sub-Contrast control so that the beam current becomes 1100 μA (rough adjustment) 2. Adjust Green Drive control and Blue Drive control so that the colour temperature is at 10900°K. (High beam: 1100 μA). 3. Adjust the Contrast control and Brightness control so that the beam current is approx. 200μA, and check that the colour temperature is at 10900°K. If the temperature is not at 10900°K, go back to "CRT CUT-OFF ADJUSTMENT" and repeat the adjustment.

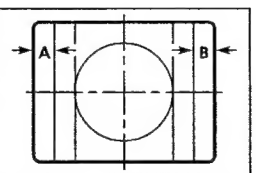
3. Sub-Contrast Adjustment

Adjusting Conditions	Adjusting Procedures
Adjusting Point ☐ R420: Sub-Contrast control ***Note: Prior to this adjustment, warm up the unit with the beam current of more than 700 μA for more than 30 minutes.*** 1. Receive "MONOSCOPE PATTERN (channel-E5)" signal. 2. Set the Contrast and Brightness controls at MAX position. 3. Connect DC milliammeter to TP602⊖ and TP603⊕. (Full scale: 3 mA)	1. Adjust Sub-Contrast control so that the beam current becomes 1100 μA.

DEFLECTION LOOP ADJUSTMENT

Adjusting Conditions	Adjusting Procedures

1. Horizontal Centering Adjustment

Adjusting Conditions	Adjusting Procedures
Adjusting Point ☐ R613: Horizontal Centering control ***Note: This adjustment should be performed after the purity and convergence adjustments.*** 1. Receive "MONOSCOPE PATTERN (channel-E5)" signal.	1. Adjust R613 so that the horizontal center of picture is at the position which gives the relation of A = B. 

2. Vertical Size Adjustment

Adjusting Conditions	Adjusting Procedures
Adjusting Point ☐ R509: Vertical Size control 1. Receive "MONOSCOPE PATTERN (channel-E5)" signal. 2. Set the Brightness and Contrast controls at MAX position.	1. Adjust R509 so that the vertical size of picture is at the best point. ● Vertical size: 8% TYP (Max. 10%)

视频/色度信号电路的调试(接上页)

调试条件	调试方法

2. 白色平衡及底色的调试

调试条件	调试方法
调试点 □R857：绿色激励控制 □R863：蓝色激励控制 □R420：副对比度控制 注意：作此项调试前，先用700μA以上的电子束电流为电视机预热30分钟以上。 1. 接收"单象管图案（频道E5)"信号。 2. 设对比度控制和亮度控制于其最大(MAX)位置。 3. 连接电子束安培计(测示范围：3mA)于TP602⊖和TP603⊕。	1. 调节副对比度控制，使电子束电流达至1100μA（粗调）。 2. 调节绿色激励控制和蓝色激励控制，使色温达至10900° K。（高电子束：1100μA）。 3. 调节对比度控制和亮度控制，使电子束电流达至200μA左右。然后，检查色温是否为10900°K，如果这时的色温并非10900° K，则必须回到"CRT切断调试"，并重复此项调试。

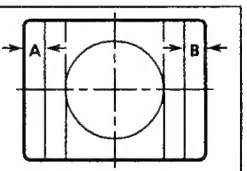
3. 副对比度的调试

调试条件	调试方法
调试点 □R420：副对比度控制 注意：作此项调试前，先用700μA以上的电子束电流为电视机预热30分钟以上。 1. 接收"单象管图案（频道E5)"信号。 2. 设对比度控制和亮度控制于其最大(MAX)位置。 3. 连接电子束安培计(测示范围：3mA)于TP602⊖和TP603⊕。	1. 调节副对比度控制，使电子束电流达至1100μA。

检波回路的调试

调试条件	调试方法

1. 水平对中调试

调试条件	调试方法
调试点 □R613:水平对中调节 注：此项调试应在色彩纯度和画面聚焦度调试之后进行。 1. 接收"单象管图案(频道E5)"信号。	1. 调节R613，使荧屏图象水平中心位置达至如图所示的A=B之程度。 

2. 垂直尺寸的调试

调试条件	调试方法
调试点 □R509：垂直尺寸调节 1. 接收"单象管图案（频道E-5)"信号。 2. 设亮度控制和对比度控制于其最大(MAX)位置。	1. 调节R509，以获得荧屏图象的最佳垂直尺寸。 ●垂直尺寸：8% TYP（最大10%）

DEFLECTION LOOP ADJUSTMENT (Continued)

Adjusting Conditions	Adjusting Procedures

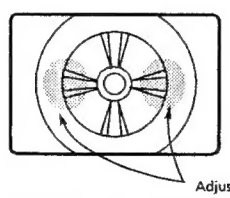
3. Vertical Linearity Adjustment

Adjusting Point ☐ **R514: Vertical Size control** 1. Receive "MONOSCOPE PATTERN (E-5)" signal.	1. Adjust R514 so that the vertical linearity of picture is at the best point.

4. Vertical Center Adjustment

Adjusting Point ☐ **S501: Vertical Center Adjust switch** ***Note: This adjustment should be performed after the purity and convergence adjustments.*** 1. Receive "MONOSCOPE PATTERN (E-5)" signal.	1. Adjust S501 so that the vertical center of picture is at the best point.

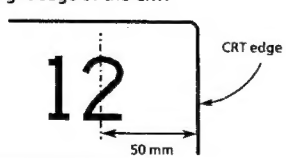
FOCUS ADJUSTMENT

Adjusting Conditions	Adjusting Procedures
Adjusting Point ☐ **T602: Focus control (a part of T602)** 1. Receive "MONOSCOPE PATTERN (channel-E5)" signal. 2. Set Contrast control at NORMAL position. 3. Set Brightness control at MAX position (with 1100 μA of beam current). (Instead of monoscope pattern signal, it is allowed to use white pattern signal of 88% modulation.)	1. Adjust Focus control to have best focus at the central area of CRT. 

CRT DISPLAY ADJUSTMENT

Adjusting Conditions	Adjusting Procedures

1. Sign Position Adjustment

Adjusting Point ☐ **T1001: Sign Position control** 1. Turn the channel call on (on the remote controller).	1. Adjust T1001 so that the center of the first-digit figure of the channel number be about 50 mm from the right edge of the CRT. 

检波回路的调试(接上页)

调试条件	调试方法

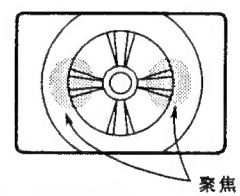
3. 垂直线性度的调整

调整点 ☐R514：垂直尺寸控制 1.接收“单象管图案（E-5）”信号。	1.调节R514,使荧屏的垂直线性度达至最佳状态。

4. 垂直对中的调试

调整点 ☐S501：垂直中心调整开关 注意：此项调整必须于色彩纯度磁铁和画面聚焦度调整完毕后进行。 1.接收“单象管图案（E-5）”信号。	1.调节S501,使荧屏的垂直对中达至最佳状态。

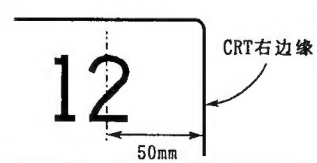
聚焦的调试

调试条件	调试方法
调试点 ☐T602:聚焦控制（T602的一部分） 1.接收“单象管图案（频道E5）”信号。 2.设对比度控制于标准(NORMAL）位置。 3.设亮度控制于其最大(MAX)位置（电子束电流为1100μA）。 （无单象管图案信号时,可用88%调制的白色图案信号代替之）。	1.调节聚焦控制，使荧屏中心位置达至最佳聚焦效果。 

CRT显示的调试

调试条件	调试方法

1. 文字信号表示位置的调试

调试点 ☐T1001：文字信号表示位置调节 1.触按遥控器上频道表示（CALL ON）键。	1.调节T1001，使频道表示数字的个位数位置达至离CRT右边缘50mm左右为宜。 

PURITY ADJUSTMENT

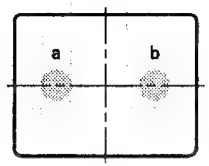
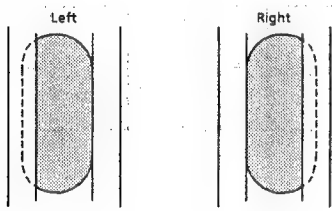
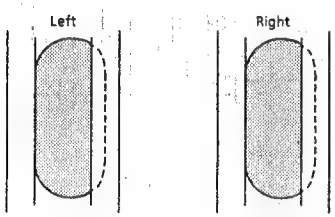


Figure A.



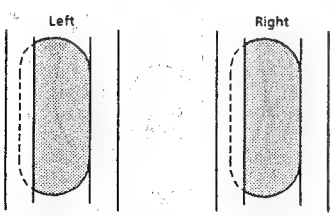
The beam landing is shifted outwards.

Figure B.



The beam landing is shifted to right.

Figure C.



The beam landing is shifted to left.

Figure D.

Adjusting Conditions

1. Prior to the purity adjustment, warm up the unit with beam current of more than 700 μA, for more than 30 minutes.
2. Receive the green signal alone and adjust the beam current to approx. 700 μA.
3. Fully degauss the CRT with the degaussing coil.
4. Before the purity adjustment, it is needed to roughly adjust the static convergence.
5. Set the purity magnet at the position which gives zero (0) magnetic field.

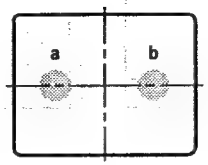
Adjusting Procedures

Adjustment:

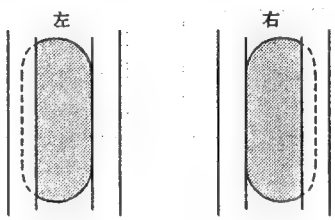
During the adjustment, keep the unit facing the east.

1. Observe the green spots ("a" and "b") with a microscope as shown in ***Fig. A***, and adjust the purity magnet so that they are at the specified landing position.
2. If the right and left green spots are both deviated outwards from their landing positions as shown in ***Fig. B***, push the deflection yoke forwards until their positions are corrected.
3. If the beam landing is shifted to right or left as shown in ***Figs. C*** and ***D***, adjust the opening degree of the purity magnet so that the beam landing is correctly positioned.
4. Adjust the purity magnet so that the beam landing is correct at either of the central part, right and left parts of screen, then check that the green beams at four corners of screen are all correctly positioned.
   Finally, check that the beam landing at any pat of screen is satisfactory with the Rank "B" specifications.
5. If the green beam is positioned to mix with the other colour, pull the deflection yoke backward.
   - Outside of the specified landing:
     To front of the deflection yoke.
   - Inside of the specified landing:
     To back of the deflection yoke.
6. Set the raster rotation at "0" position (with the unit facing the east).
7. Tighten the screws of the deflection coil.
   Tightening torque: 11 kg ± 2 kg.

色彩纯度调试

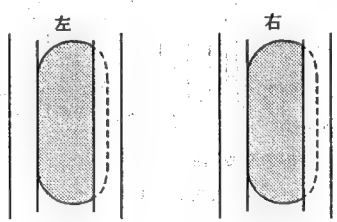


图A



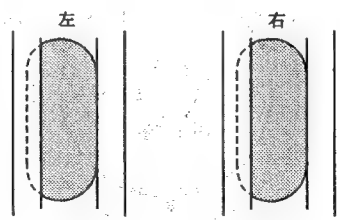
电子束射击点位置向外偏移

图B



电子束射击点位置向右偏移

图C



电子束射击点位置向左偏移

图D

调试条件

1. 作此项调试之前，请用大于700μA的电子束电流预热CRT装置30分钟。
2. 接收绿色单色信号，并调节其电子束电流于700μA左右。
3. 通过消磁线圈对CRT作完全消磁处理。
4. 在作色彩纯度调试时，必须先对静聚焦进行粗调。
5. 调节色彩纯度磁铁，使其磁场磁势为0。

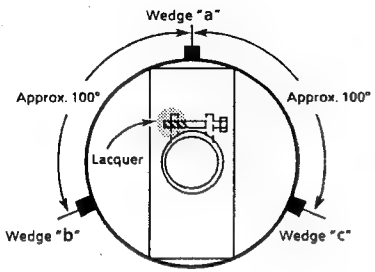
调试方法

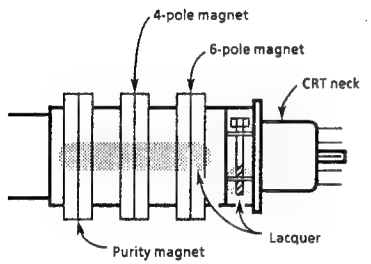
调试：

调试中，必须保持CRT面向东方。

1. 用显示镜（放大镜）观察图A所示的两绿色色点（"a"和"b"），调节色彩纯度磁铁，使两色点位置符合规定要求为止。
2. 如果两色色点位置如图B所示各自发生左右偏差，可向前按压偏转线圈将其校正。
3. 如果两色色点位置如图C或图D所示均发生向右或向左偏移现象，可通过调节色彩纯度磁铁的开启程度，校正电子束射击点位置。
4. 调节色彩纯度磁铁，校正绿色电子束在屏幕中心的射击点位置以及屏幕左右两边的射击点位置。然后，检验在屏幕四角的射击点位置正确与否。最后，按规范B级要求精确检查屏幕上任意点的着色位置是否满足要求。
5. 如果绿色电子束在屏幕的着色点掺杂有其它色彩，可向后轻拉偏转线圈消除其它杂色。
   - 着色点位置向外偏移：
     前推偏转线圈加以调节。
   - 着色点位置向内偏移：
     后拉偏转线圈加以调节。
6. 将光栅偏转角调节至0(CRT座南朝东)。
7. 紧固偏转线圈。
   紧固扭矩：11kg ± 2kg

CONVERGENCE ADJUSTMENT





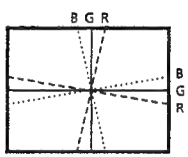


Figure a.

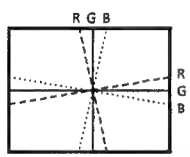


Figure b.

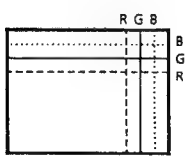


Figure c.

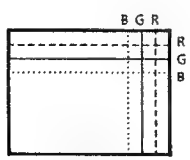


Figure d.

Adjusting Conditions

This adjustment should be performed after the purity magnet adjustment.

1. Receive "CROSSHATCH PATTERN (channel-E2)" signal.
2. Set the Brightness control and Contrast control at MAX position.

Adjusting Procedures

STATIC CONVERGENCE

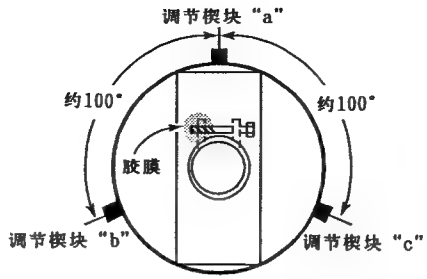
1. Adjust the opening degree of the 4-pole magnet and rotate the magnet to converge red and blue lines.
2. Adjust the opening degree of the 6-pole magnet and rotate the magnet to converge red, blue and green lines.

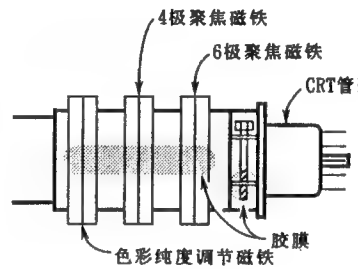
DYNAMIC CONVERGENCE

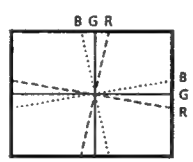
3. Dynamic convergence (convergence of the three colour fields) at the edges of CRT screen is accomplished in the following manner.
   - **Convergence in *Fig. a* :**
     Insert wedge"a" between the deflection yoke and CRT, and tilt the deflection yoke upward until the mis-convergence shown in ***Fig. a*** is corrected.
   - **Convergence in *Fig. b* :**
     Insert wedges "b" and "c" between the deflection yoke and CRT, and tilt the deflection yoke until the mis-convergence shown in ***Fig. b*** is corrected.
   - **Convergence in *Fig. c* :**
     Insert wedge "c" deeply between the deflection yoke and CRT, and tilt the deflection yoke to right until the mis-convergence shown in ***Fig. c*** is corrected.
   - **Convergence in *Fig. d* :**
     Insert wedge "b" deeply between the deflection yoke and CRT, and tilt the deflection yoke to left until the mis-convergence shown in ***Fig. d*** is corrected.
4. Stick the three wedges onto the CRT, and apply glass tapes thereon.
5. Apply lacquer to the deflection yoke screw, magnet unit (made of purity, 4-pole and 6-pole magnets) and magnet unit screw.

After the adjustment, receive either the Red or the Blue signal and check that there is no mixture with the other colour signal.

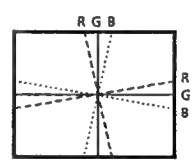
聚焦度的调试



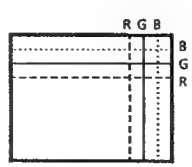




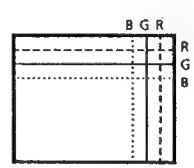
图a.



图b.



图c.



图d.

调试条件

此项调试必须于色彩纯度调试之后进行。

1. 接收"棋盘格测试图（频道E2）信号。
2. 设亮度调节和对比度调节于最大位置。

调试方法

静聚焦度的调试

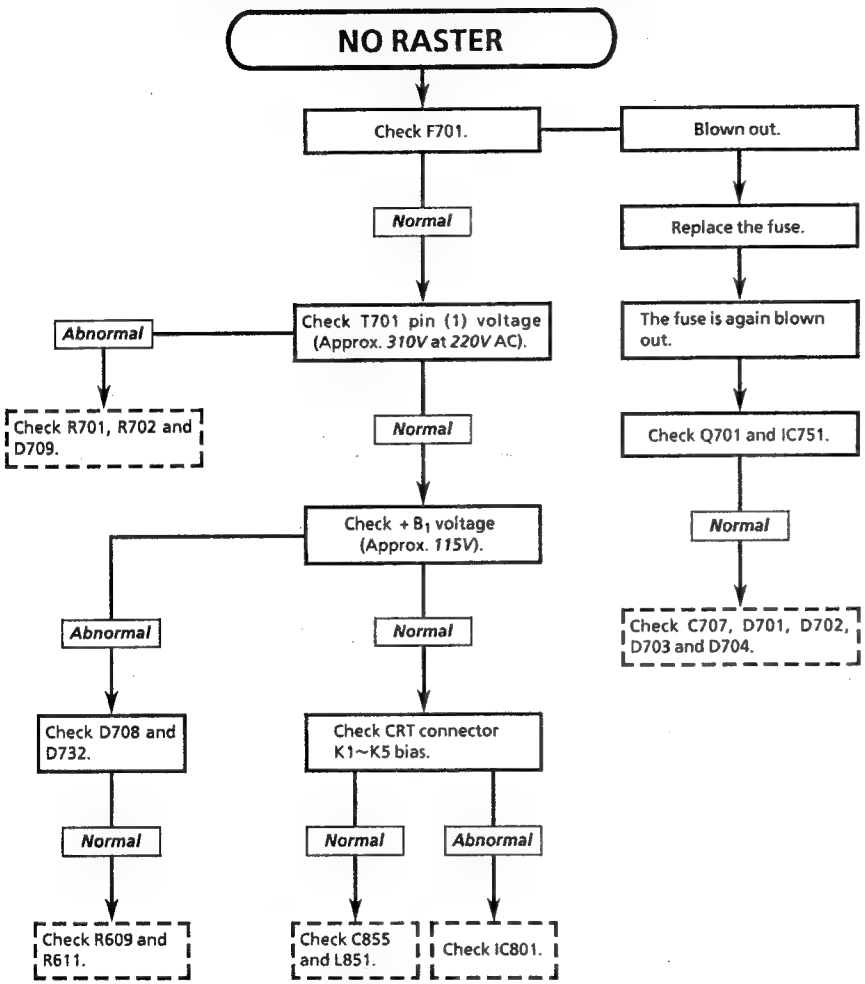
1. 调节4极聚焦磁铁的张开程度以及其转角，以会聚红色线条和蓝色线条。
2. 调节6极聚焦磁铁的张开程度以及其转角，以会聚红色线条，蓝色线条和绿色线条。

动聚焦度的调试

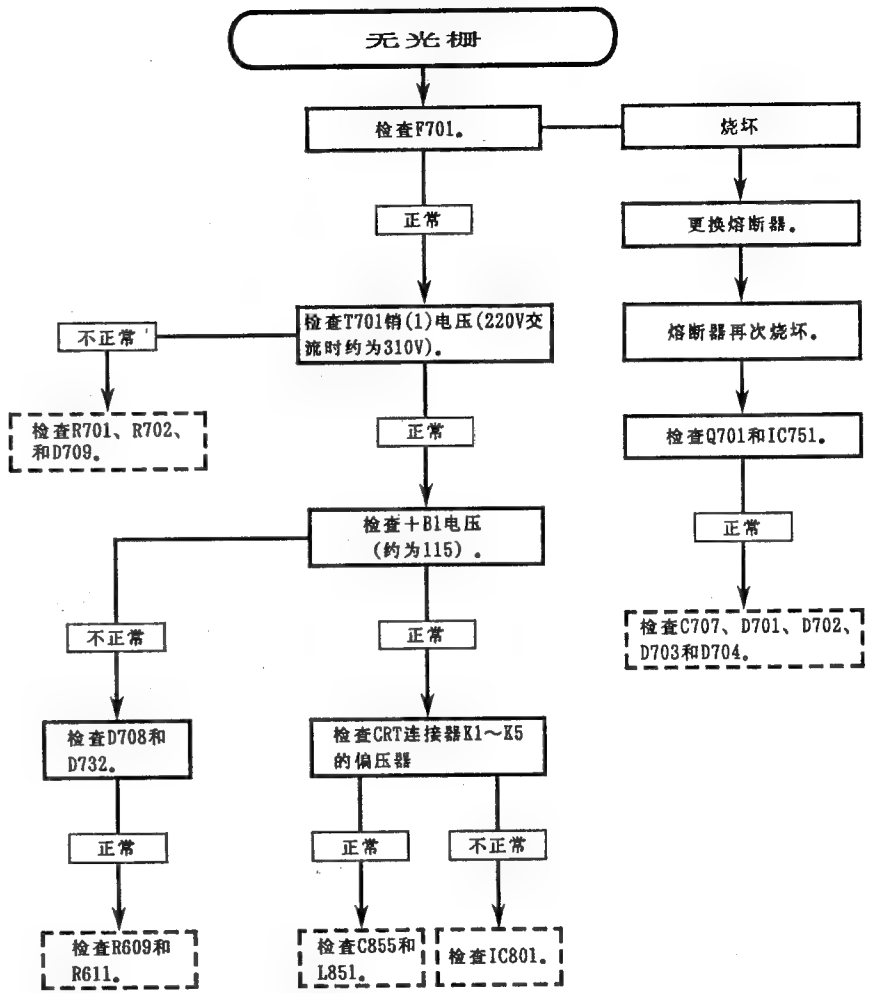
3. CRT荧屏边缘的动聚焦度（三彩色色场的会聚）的调试按下述要求进行。
   - 按图a.要求的会聚调试：
     插入调节楔块"a"于偏转线圈和CRT之间，并向上倾斜调节偏转线圈，以按图a.所示要求矫正不良会聚。
   - 按图b.要求的会聚调试：
     插入调节楔块"b"和"c"于偏转线圈和CRT之间，并倾斜调节偏转线圈，以按图b.所示要求矫正不良会聚。
   - 按图c.要求的会聚调试：
     深插调节楔块"c"于偏转线圈和CRT之间，并向右倾斜调节偏转线圈，以按图c.所示要求矫正不良会聚。
   - 按图d.要求的会聚调试：
     深插调节楔块"b"于偏转线圈和CRT之间，并向左倾斜调节偏转线圈，以按图d.所示要求矫正不良会聚。
4. 完成以上调试后，用透明胶带粘固三只调节楔块于CRT。
5. 然后用胶膜封固偏转线圈调节螺丝，调节磁铁装置（由纯度调节磁铁，4极聚焦磁铁和6极聚焦磁铁构成）以及调节磁铁装置固定螺丝。

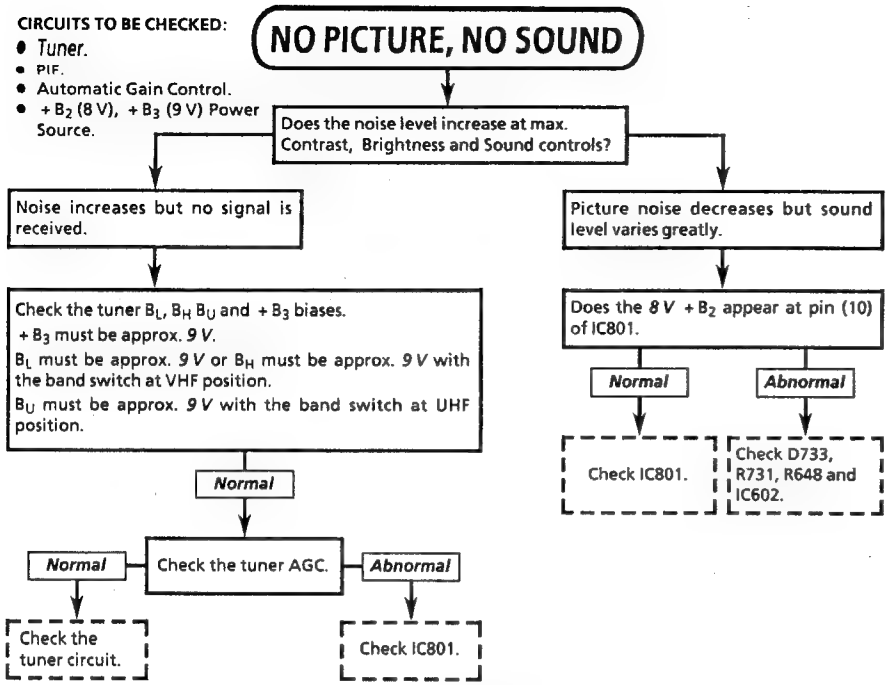
该项调试完成后，让电视机接收红色或蓝色信号，并检查接收的单色信号是否掺杂有其他色彩信号。

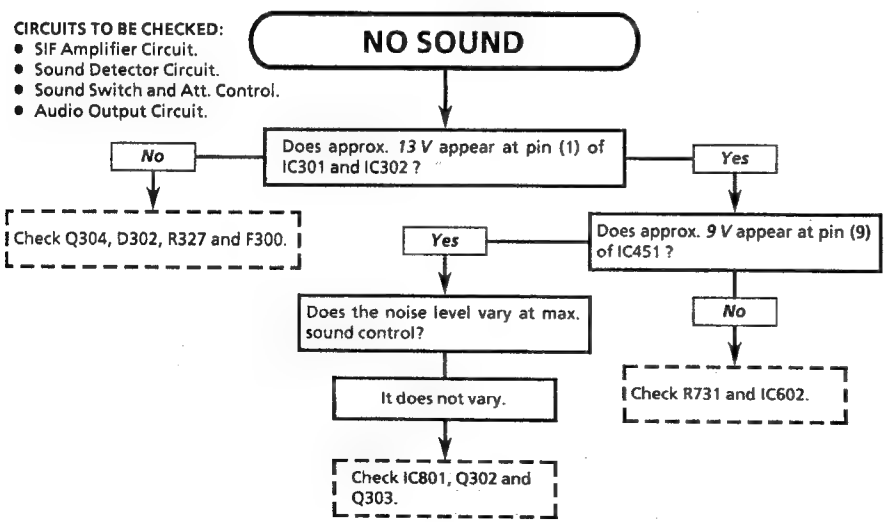
TROUBLE SHOOTING TABLE



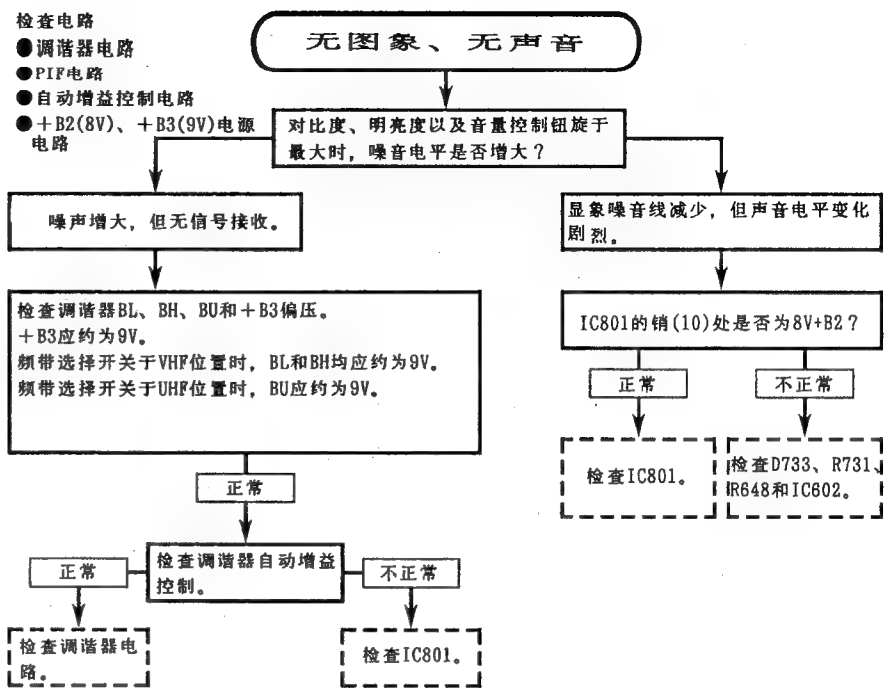
故障检修表

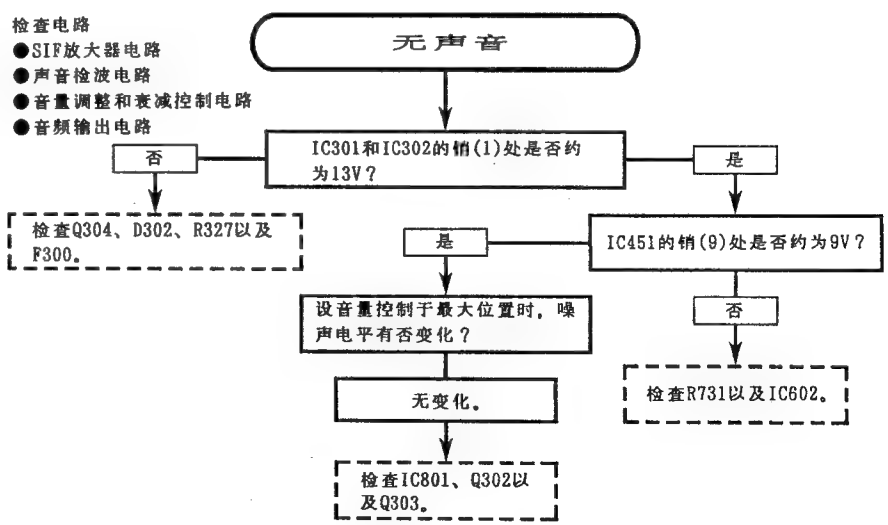



CIRCUITS TO BE CHECKED:
• Tuner.
• PIF.
• Automatic Gain Control.
• +B2 (8 V), +B3 (9 V) Power Source.
NO PICTURE, NO SOUND
Does the noise level increase at max. Contrast, Brightness and Sound controls?
Noise increases but no signal is received.
Picture noise decreases but sound level varies greatly.
Check the tuner BL, BH BU and +B3 biases.
+B3 must be approx. 9 V.
BL must be approx. 9 V or BH must be approx. 9 V with the band switch at VHF position.
BU must be approx. 9 V with the band switch at UHF position.
Does the 8 V +B2 appear at pin (10) of IC801.
Normal
Abnormal
Check IC801.
Check D733, R731, R648 and IC602.
Normal
Normal
Check the tuner AGC.
Abnormal
Check the tuner circuit.
Check IC801.


CIRCUITS TO BE CHECKED:
• SIF Amplifier Circuit.
• Sound Detector Circuit.
• Sound Switch and Att. Control.
• Audio Output Circuit.
NO SOUND
No
Does approx. 13 V appear at pin (1) of IC301 and IC302 ?
Yes
Check Q304, D302, R327 and F300.
Yes
Does approx. 9 V appear at pin (9) of IC451 ?
No
Does the noise level vary at max. sound control?
Check R731 and IC602.
It does not vary.
Check IC801, Q302 and Q303.

E-14


检查电路
●调谐器电路
●PIF电路
●自动增益控制电路
●+B2(8V)、+B3(9V)电源电路
无图象、无声音
对比度、明亮度以及音量控制钮旋于最大时，噪音电平是否增大？
噪声增大，但无信号接收。
显象噪音线减少，但声音电平变化剧烈。
检查调谐器BL、BH、BU和+B3偏压。
+B3应约为9V。
频带选择开关于VHF位置时，BL和BH均应约为9V。
频带选择开关于UHF位置时，BU应约为9V。
IC801的销(10)处是否为8V+B2？
正常
不正常
检查IC801。
检查D733、R731、R648和IC602。
正常
正常
检查调谐器自动增益控制。
不正常
检查调谐器电路。
检查IC801。


检查电路
●SIF放大器电路
●声音检波电路
●音量调整和衰减控制电路
●音频输出电路
无声音
否
IC301和IC302的销(1)处是否约为13V？
是
检查Q304、D302、R327以及F300。
是
IC451的销(9)处是否约为9V？
设音量控制于最大位置时，噪声电平有否变化？
否
无变化。
检查R731以及IC602。
检查IC801、Q302以及Q303。

C-14

NEITHER VERTICAL NOR HORIZONTAL SYNCHRONIZATION

CIRCUIT TO BE CHECKED:
- Sync. Separator Circuit.

Check IC801.

DEFECTIVE VERTICAL AMP. AND VERTICAL LINEARITY

Readjust vertical size.

- Vertical size is abnormal. → Check R510, R511, C514 and R509.
- Vertical linearity is abnormal. → Check C508, R519, R508 and R505.

NO VERTICAL SCAN

Check IC501 bias.

- *Normal* → Check C506.
- *Abnormal* → Check IC501.

E-15

无垂直同步信号和水平同步信号

检查电路：
- ●同步分离电路

检查IC801。

垂直放大及垂直线性度异常

重调垂直尺寸。

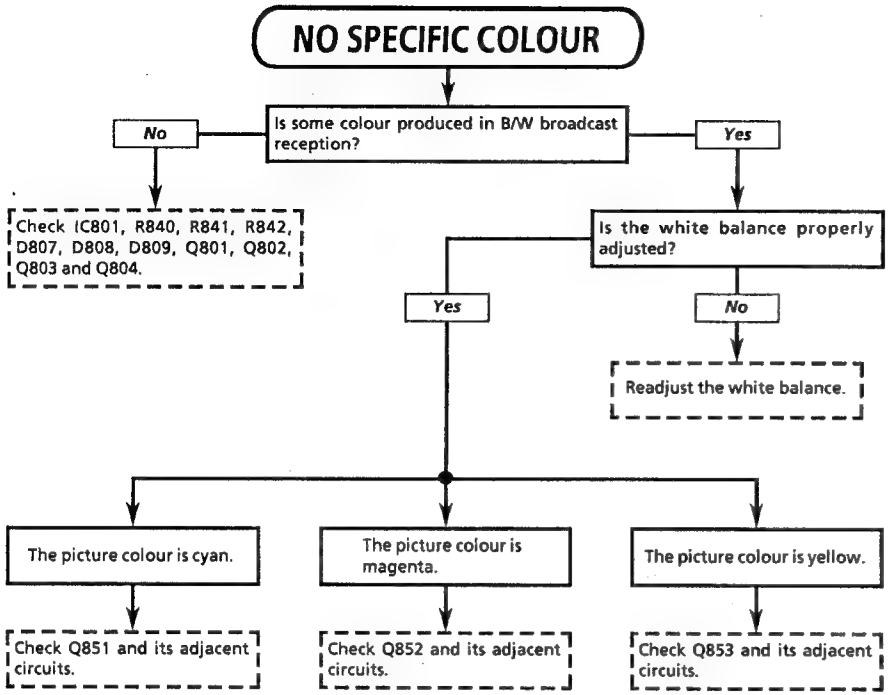
- 垂直尺寸不符要求。 → 检查R510、R511、C514和R509。
- 垂直线性度不符要求。 → 检查C508、R519、R508和R505。

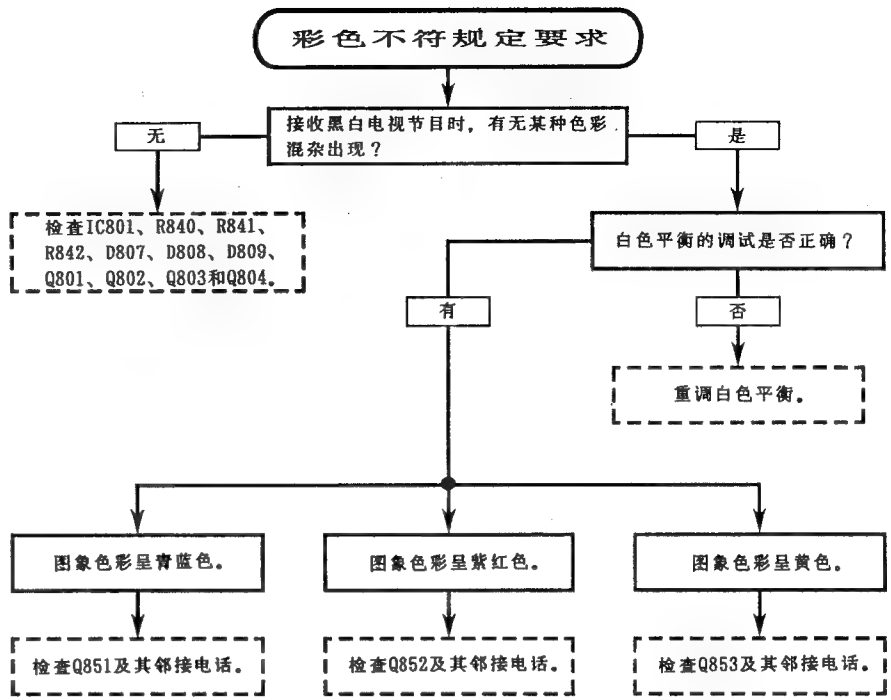
无垂直扫描

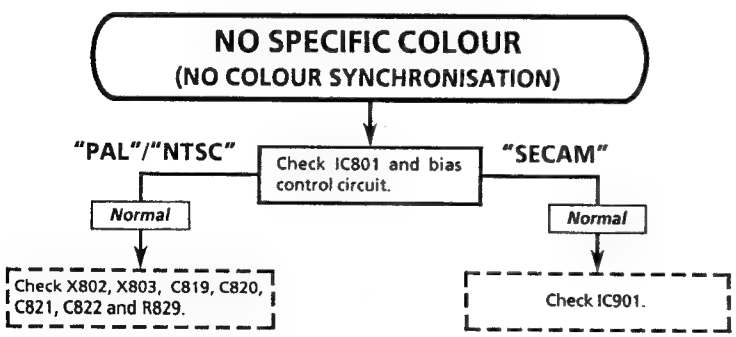
检查IC501偏压器。

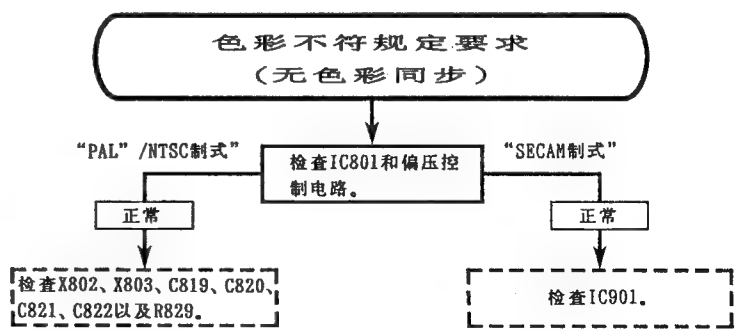
- 正常 → 检查C506。
- 不正常 → 检查IC501。

C-15


NO SPECIFIC COLOUR
Is some colour produced in B/W broadcast reception?
No
Yes
Check IC801, R840, R841, R842, D807, D808, D809, Q801, Q802, Q803 and Q804.
Is the white balance properly adjusted?
Yes
No
Readjust the white balance.
The picture colour is cyan.
The picture colour is magenta.
The picture colour is yellow.
Check Q851 and its adjacent circuits.
Check Q852 and its adjacent circuits.
Check Q853 and its adjacent circuits.


彩色不符规定要求
接收黑白电视节目时，有无某种色彩混杂出现？
无
是
检查IC801、R840、R841、R842、D807、D808、D809、Q801、Q802、Q803和Q804.
白色平衡的调试是否正确？
有
否
重调白色平衡。
图象色彩呈青蓝色。
图象色彩呈紫红色。
图象色彩呈黄色。
检查Q851及其邻接电话。
检查Q852及其邻接电话。
检查Q853及其邻接电话。

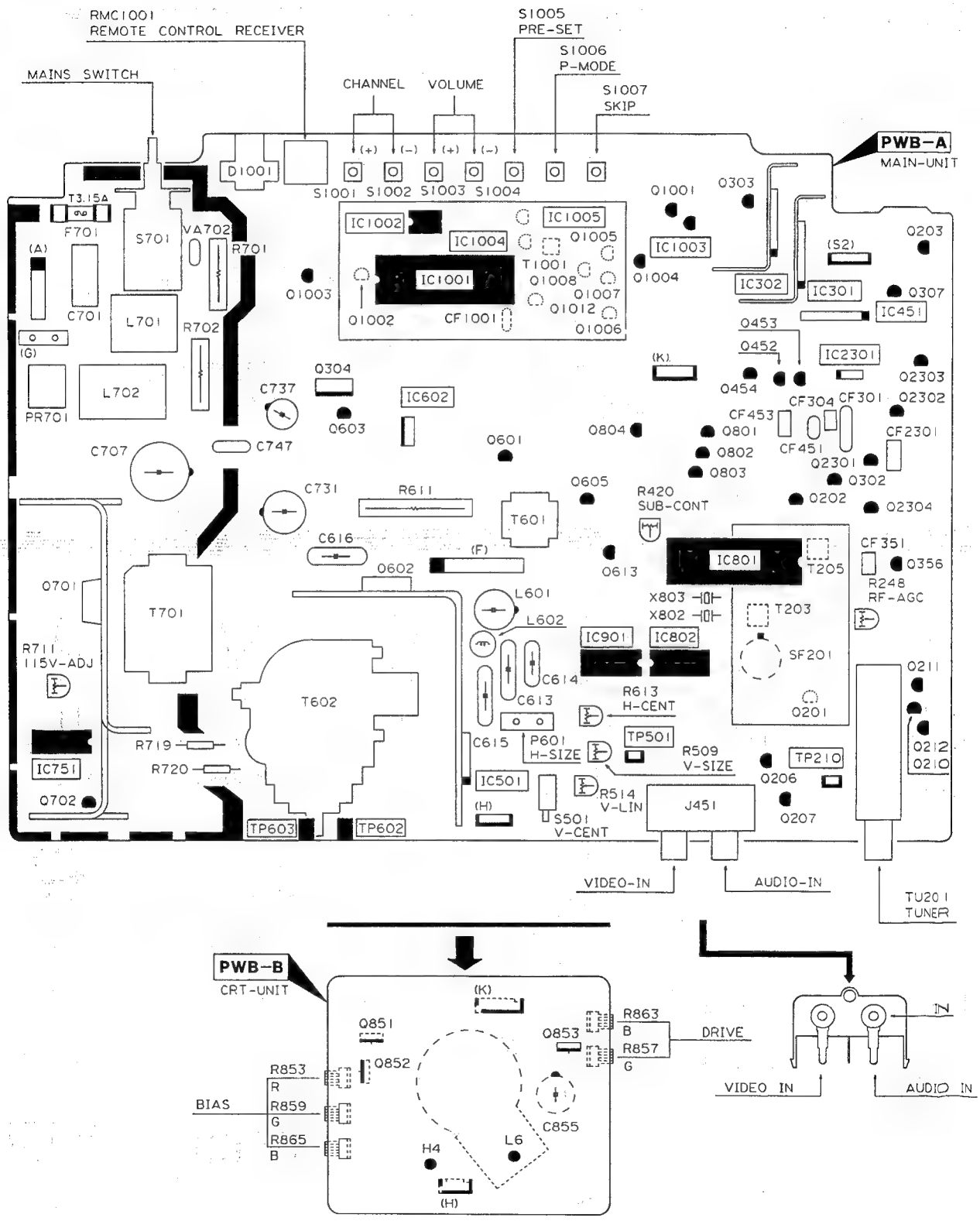

NO SPECIFIC COLOUR
(NO COLOUR SYNCHRONISATION)
"PAL"/"NTSC"
Check IC801 and bias control circuit.
"SECAM"
Normal
Normal
Check X802, X803, C819, C820, C821, C822 and R829.
Check IC901.


色彩不符规定要求
（无色彩同步）
"PAL" /NTSC制式"
检查IC801和偏压控制电路。
"SECAM制式"
正常
正常
检查X802、X803、C819、C820、C821、C822以及R829。
检查IC901。

E-16

C-16

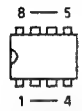
CHASSIS LAYOUT
机芯底盘电路布置



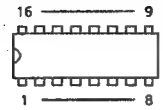
SOLID STATE DEVICE BASE DIAGRAM

固体器件基座图

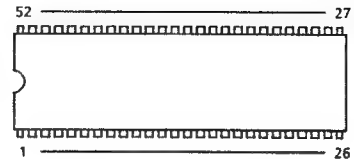
TOP VIEW 俯视图



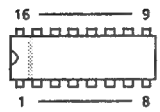
CAT93C46



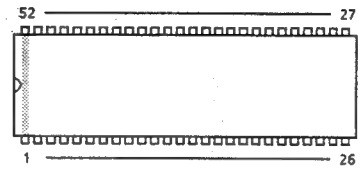
iX1779CE



iX2321CE



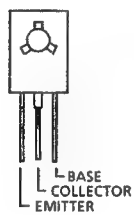
TDA4661
TDA8395



TDA8362

SIDE VIEW 侧视图

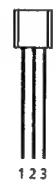
2SA1015
2SC1906
2SC383
2SC945



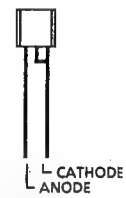
2SC3417

2SA1348
2SC3402

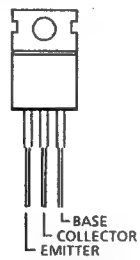
UPC78L05



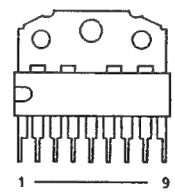
PST529C2



iX0037CE

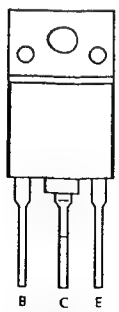


2SD880

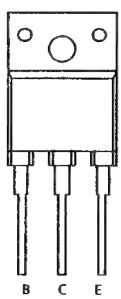


TDA7056

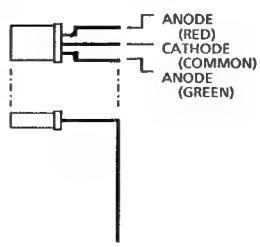
LA7975



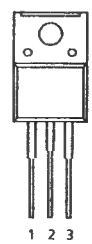
2SD2095



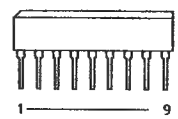
2SD1884



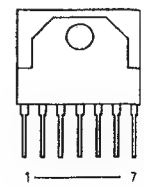
PX0290CE



TA7809S

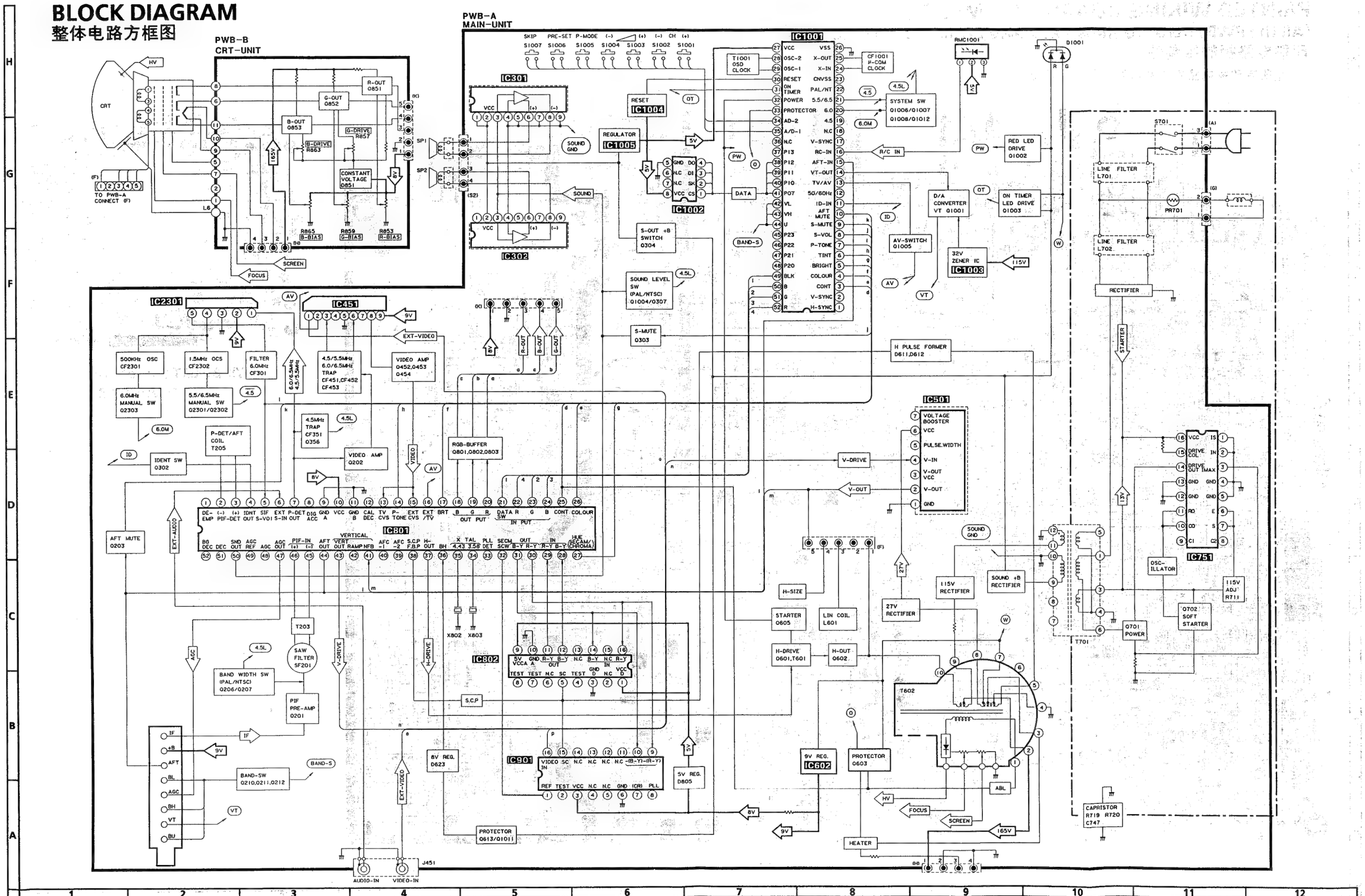


TA7348



iX0640CE

BLOCK DIAGRAM
整体电路方框图

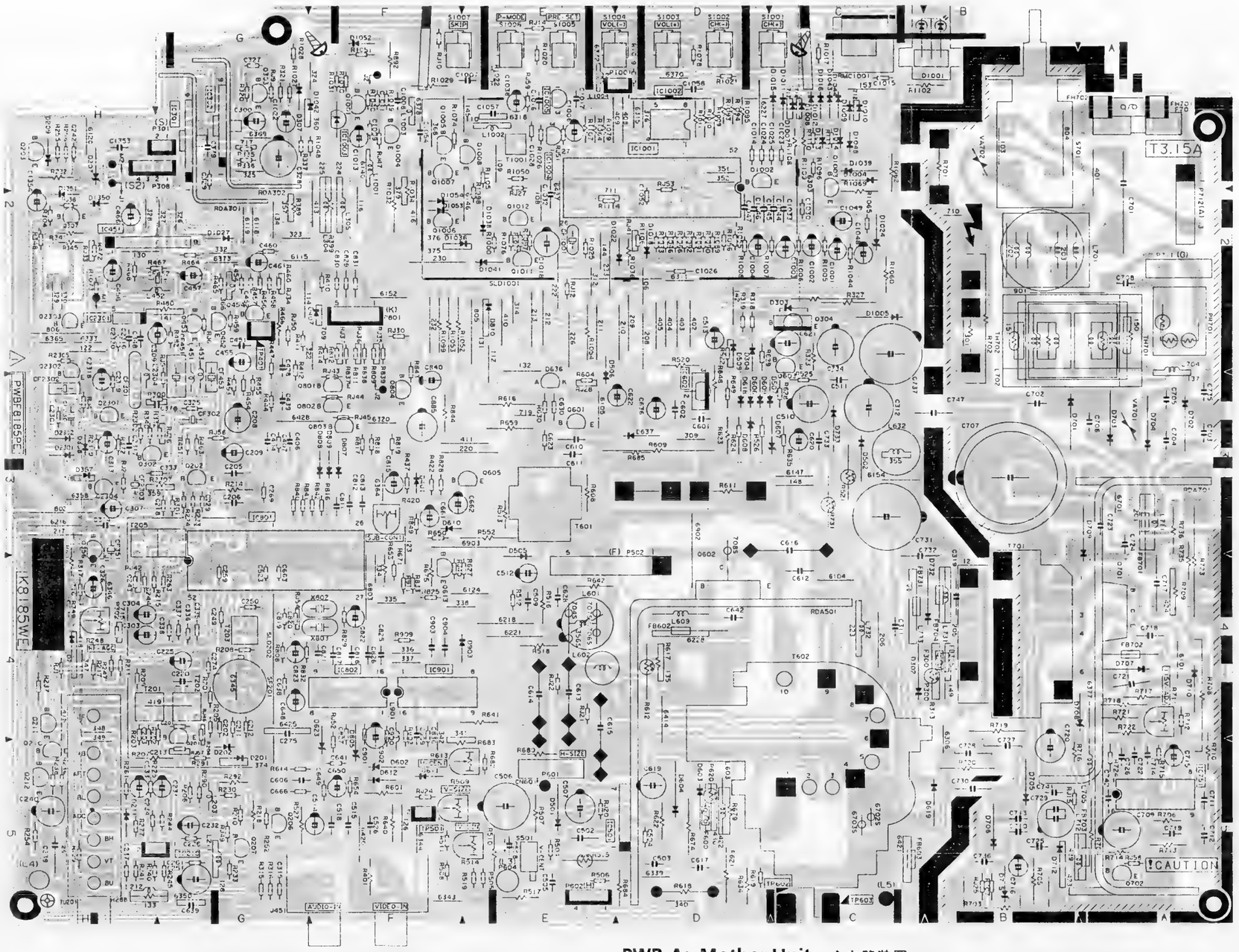


PRINTED WIRING BOARD ASSEMBLIES

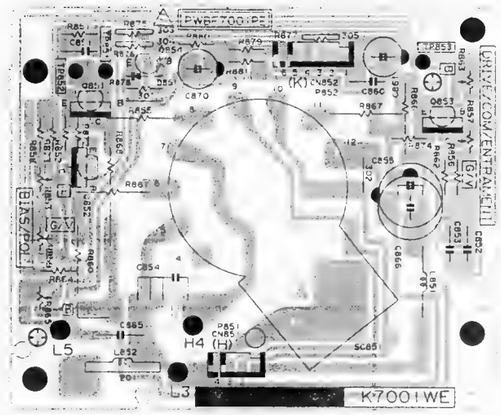
(All the PWBs here are shown as viewed from their wiring sides.)

印刷电路板的组装件

（这里所有印刷电路都是从线路贴置侧显示出来的。）



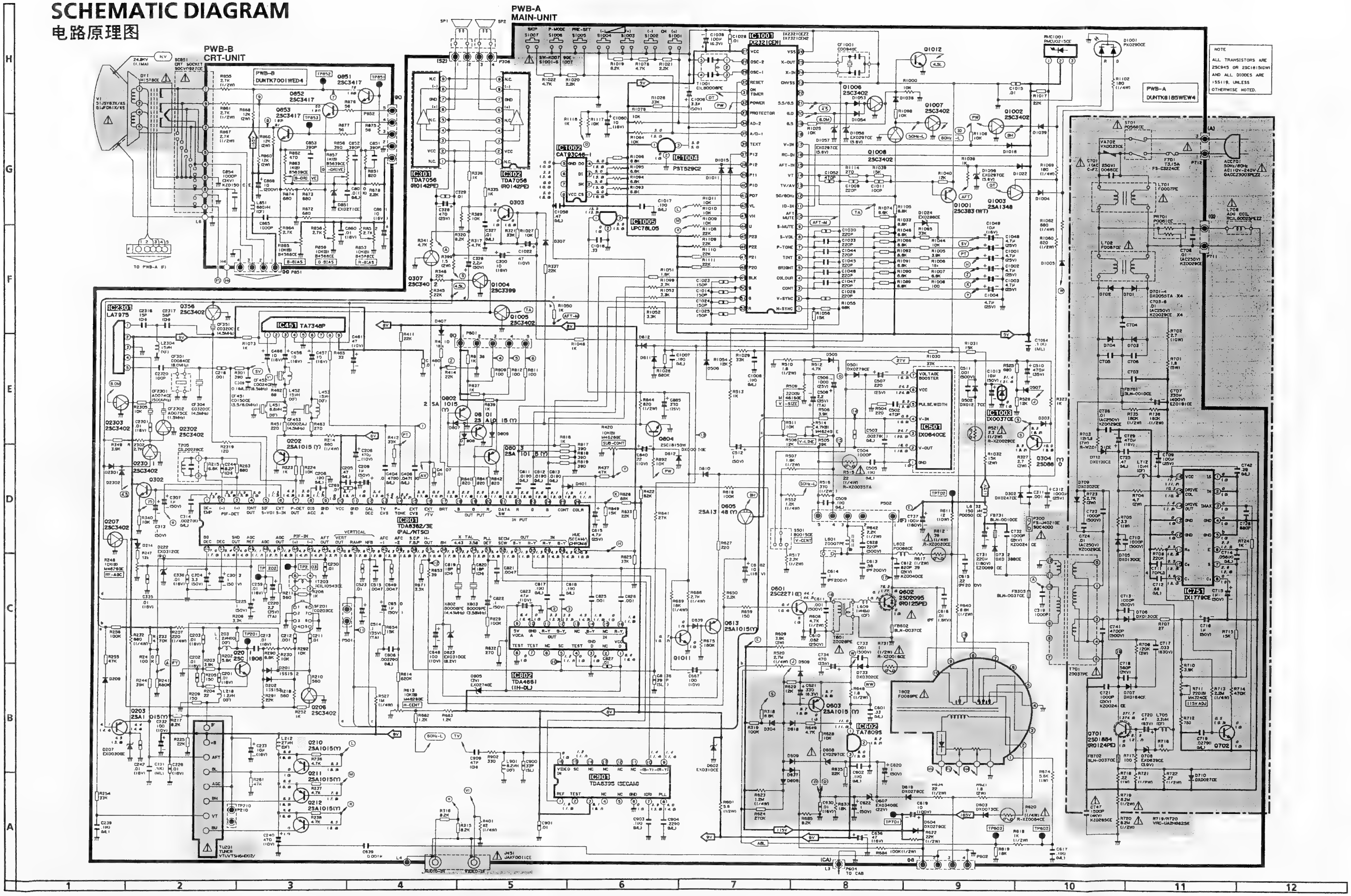
PWB-A: Mother Unit 主电路装置



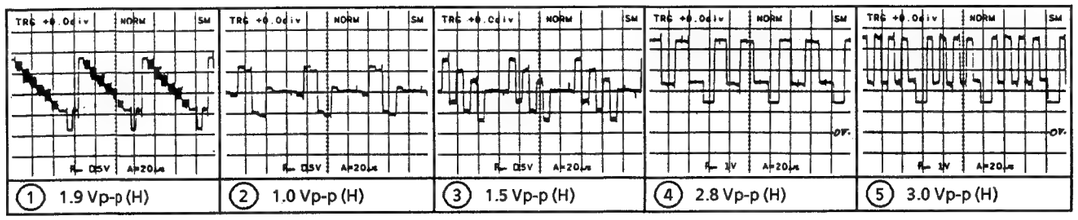
PWB-B: CRT Socket Unit

CRT管座电路装置

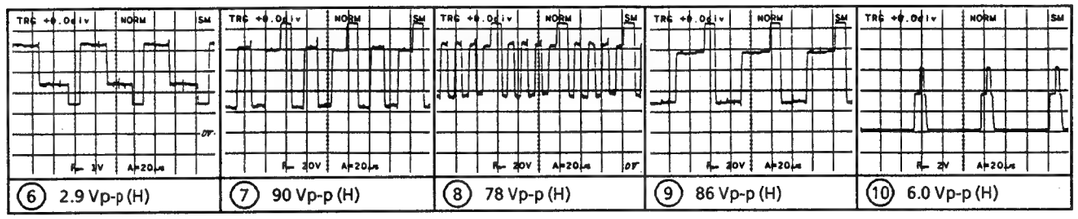
SCHEMATIC DIAGRAM
电路原理图


PWB-B
CRT-UNIT
PWB-B
DUNTK7001WED4
PWB-A
MAIN-UNIT
PWB-A
DUNTK6185WEW4
NOTE
ALL TRANSISTORS ARE 2SC945 OR 2SC1815(GW) AND ALL DIODES ARE 1SS119, UNLESS OTHERWISE NOTED.
IC301 TDA7056 (R0142PE)
IC302 TDA7056 (R0142PE)
IC1001 IX2321CEN1
IC1002 CAT93C46-1
IC1004 PST529C2
IC1005 UPC78L05
IC2301 LA7975
IC451 TA7348P
IC801 TDA8362/3E (PAL/NTSC)
IC802 TDA4661 (1H-DL)
IC901 TDA8395 (SECAM)
IC501 IX0640CE
IC1003 IX0037CE
IC602 TA78095
IC751 IX1779CE
TU201 TUNER VTUVTSH6HD02/
J451 JAKF0011CE
ACC701 50Hz/60Hz AC110V-240V QACCZ3003PEZZ
T701 Z0037PE
T601 Z0028PE
T802 F0089PE
TO PWB-A (F)
TO CAB

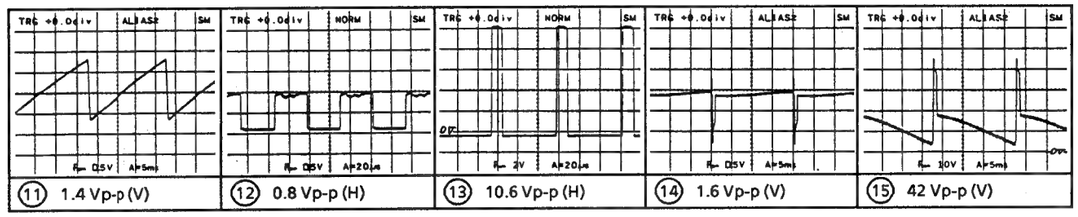
WAVEFORMS
波形图



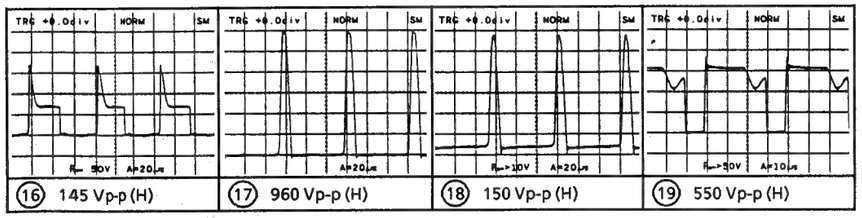
① 1.9 Vp-p (H)　② 1.0 Vp-p (H)　③ 1.5 Vp-p (H)　④ 2.8 Vp-p (H)　⑤ 3.0 Vp-p (H)



⑥ 2.9 Vp-p (H)　⑦ 90 Vp-p (H)　⑧ 78 Vp-p (H)　⑨ 86 Vp-p (H)　⑩ 6.0 Vp-p (H)



⑪ 1.4 Vp-p (V)　⑫ 0.8 Vp-p (H)　⑬ 10.6 Vp-p (H)　⑭ 1.6 Vp-p (V)　⑮ 42 Vp-p (V)



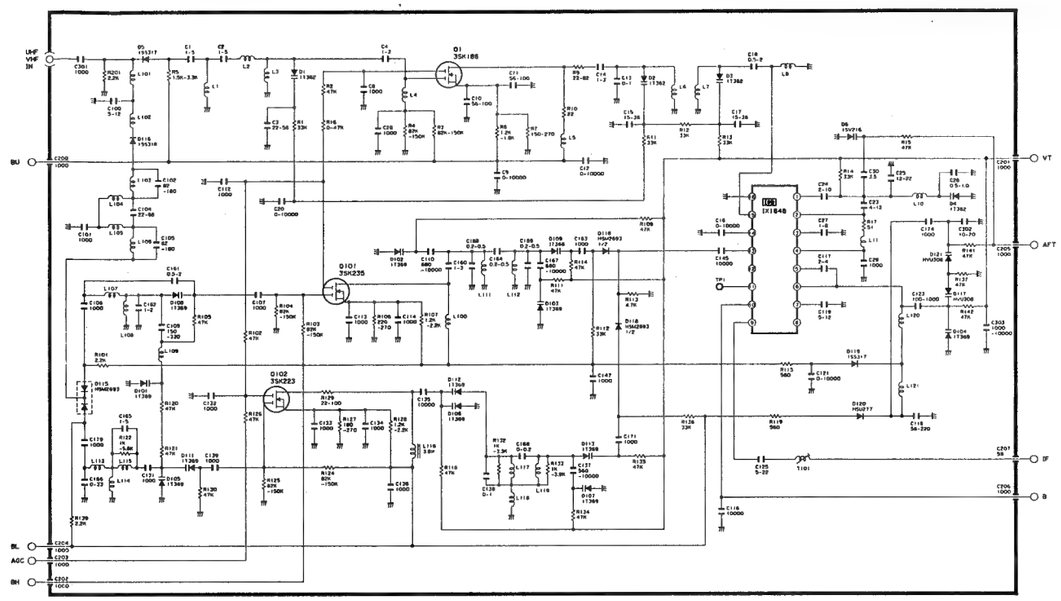
⑯ 145 Vp-p (H)　⑰ 960 Vp-p (H)　⑱ 150 Vp-p (H)　⑲ 550 Vp-p (H)

■ Tuner 调谐器

⚠ VTUVTSH6HD02/

NOTE: The parts here shown are supplied as an assembly but not independently.

注意：在更换零件订货时，请以一套为最小单位，切勿以单件订货。

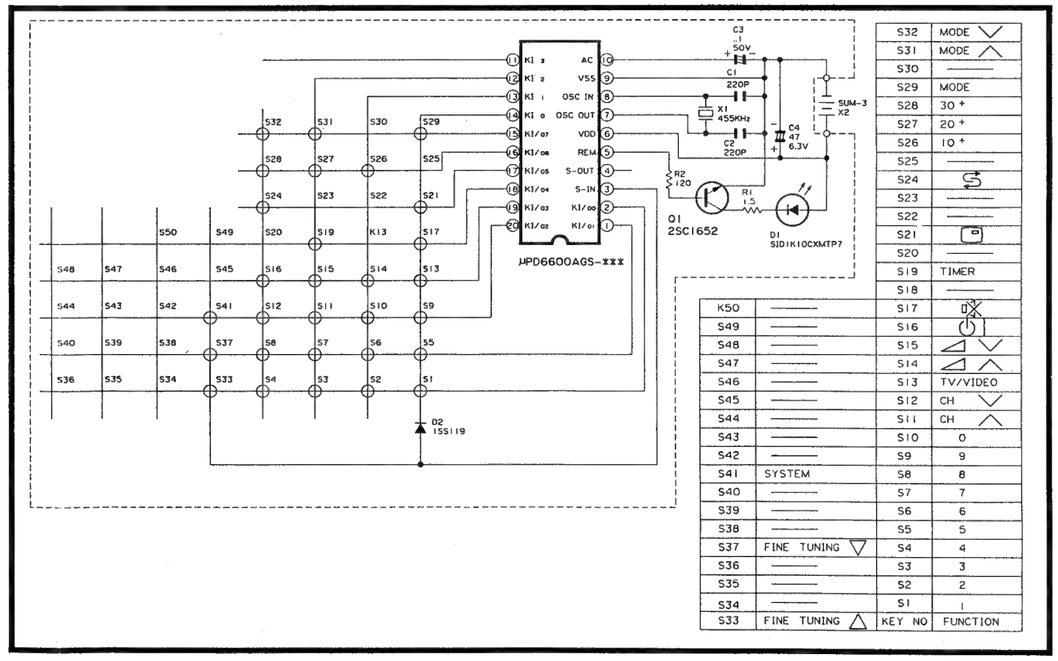


■ Infrared Remote Control Unit 红外线遥控器

RRMCG0999PESA

NOTE: The parts here shown are supplied as an assembly but not independently.

注意：在更换零件订货时，请以一套为最小单位，切勿以单件订货。



K50	——	S32	MODE ▽
S49	——	S31	MODE △
S48	——	S30	——
S47	——	S29	MODE
S46	——	S28	30 +
S45	——	S27	20 +
S44	——	S26	10 +
S43	——	S25	——
S42	——	S24	⇆
S41	SYSTEM	S23	——
S40	——	S22	——
S39	——	S21	▭
S38	——	S20	——
S37	FINE TUNING ▽	S19	TIMER
S36	——	S18	——
S35	——	S17	⏻
S34	——	S16	⏻
S33	FINE TUNING △	S15	◁ ▽
KEY NO	FUNCTION	S14	◁ △
		S13	TV/VIDEO
		S12	CH ▽
		S11	CH △
		S10	0
		S9	9
		S8	8
		S7	7
		S6	6
		S5	5
		S4	4
		S3	3
		S2	2
		S1	1

DESCRIPTION OF SCHEMATIC DIAGRAM

SAFETY NOTE:
1. DISCONNECT THE AC PLUG FROM THE AC OUTLET BEFORE REPLACEING PARTS.
2. SEMICONDUCTOR HEAT SINKS SHOULD BE REGARDED AS POTENTIAL SHOCK HAZARDS WHEN THE CHASSIS IS OPERATING.

IMPORTANT SAFETY NOTICE:
PARTS MARKED WITH "⚠" (▒▒▒▒▒▒▒▒) ARE IMPORTANT FOR MAINTAINING THE SAFETY OF THE SET. BE SURE TO REPLACE THESE PARTS WITH SPECIFIED ONES FOR MAINTAINING THE SAFETY AND PERFORMANCE OF THE SET.

SERVICE PRECAUTION:
THE AREA ENCLOSED BY THIS LINE (▬ ▪ ▬) IS DIRECTLY CONNECTED WITH AC MAINS VOLTAGE.
WHEN SERVICING THE AREA, CONNECT AN ISOLATING TRANSFORMER
BETWEEN TV RECEIVER AND AC LINE TO ELIMINATE HAZARD OF ELECTRIC SHOCK.

NOTE:
1. The unit of resistance "ohm" is omitted (K = 1000 ohms, M = Megaohm).
2. All resistors are 1/8 watt, unless otherwise noted.
3. All capacitors are μF, unless otherwise noted (P = μμF).

VOLTAGE MEASUREMENT CONDITIONS:
1. Voltages in parenthesis measured with no Signal.
2. Voltages without parenthesis measured with 3mV B & W or Colour-Signal.
3. All the voltages in each point are measured with VTVM.

WAVEFORM MEASUREMENT CONDITIONS:
1. Colour bar generator signal of 1.5 V peak to peak applied at Base of Video Buffer Amp. Q202.
2. Approximately 4.0 V AGC bias.

电路原理图的说明

安全使用注意事项：
1.在进行部件更换之前，务请拔出电源插头。
2.本装置工作时，机芯底盘的半导体散热片有触电之虑，务请注意。

安全使用注意要点：
标有"⚠"(▒▒▒▒▒▒▒▒)的部件对于电视机安全的维护有至关重要的意义。为了维护本机的安全和使本机能正常工作，必须使用指定品来更换这些部件。

维修注意：
被(▬ ▪ ▬)线围起的地方直接和交流电源电压相连接。当对该处进行维修时，为了排除遭受电击的危险性，要在电视接收机和交流电源之间连接隔离变压器。

电路单位说明：
1.电阻欧姆(Ω)单位予以略记(K=千欧姆，M=兆欧姆)。
2.除特别说明者外，图中电阻功率均为1/8瓦特。
3.除特别说明者(P=微微法拉)外，图中电容单位均为μF(微法拉)。
4.除特别说明者外，所有的二极管均为1SS119。

电压测定条件：
1.括号中的电压值为无信号状态下所测。
2.括号外的电压值为3mV黑白或彩色信号状态下所测。
3.所有测点的电压值均为电子管电压计VTVM所测。

波形测定条件：
1.施加1.5Vp-p的彩条发生器信号于视频缓冲放大器Q202的基极。
2.约4.0V自动增益控制偏压。

PARTS LIST

更换零件表

PARTS REPLACEMENT

Replacement parts which have these special safety characteristics identified in this manual: electrical components having such features are identified by "⚠" in the Replacement Parts Lists.
The use of a substitute replacement part which does not have the same safety characteristics as the factory recommended replacement parts shown in this service manual may create shock, fire or other hazards.

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.

1. MODEL NUMBER
2. REF. NO.
3. PART NO.
4. DESCRIPTION
5. CODE
6. QUANTITY

更换零件

本维修说明书对具有特别安全要求的零件均用标记加以识别：在此更换零件表中，具有特别安全要求的电路元件均用⚠标记以便注意识别。更换零件时，为了用户的安全以及电视机原有的工作性能，务请使用夏普规定零件。否则，可能有导致触电、火灾或其他不测事故发生的可能。

更换零件的订货方法

为了能迅速而确实地接受订货、以及正确无误地按时交货，在订货时请将下列各项明确告知。

1. 型号
2. 参考编号
3. 零件编号
4. 零件名称
5. 代号
6. 数量

MARK ★: SPARE PARTS-DELIVERY SECTION.

附★记号为备用部件的交货部门

Ref. No.	Part No.	★	Description	Code

PICTURE TUBE

⚠ V1	VB51JSY63X/*S	R	CRT, 51cm (21")	CE
⚠ DY1	RCiLH1576CEZZ	J	Deflection Yoke	BD
⚠ L708	RCiLG0025PEZZ	R	Degaussing Coil	AW
	PMAGF3003CEZZ	J	Purity Magnet	AK
	PSPAG0003PEZZ	R	Wedge, (3 pcs used)	AD
	MSPRT0001PEFJ	R	Spring, CRT	AC

PRINTED WIRING BOARD ASSEMBLIES
(*NOT REPLACEMENT ITEM*)

PWB-A	DUNTK8185WEW4	-	Mother Unit	—
PWB-B	DUNTK7001WED4	-	CRT Socket Unit	—

PWB-A DUNTK8185WEW4
MOTHER UNIT

TUNER

NOTE: THE PARTS HERE SHOWN ARE SUPPLIED AS AN ASSEMBLY BUT NOT INDEPENDENTLY.

⚠ TU201	VTUVTSH6HD02/	J	Tuner, VHF/UHF	BF

INTEGRATED CIRCUITS

IC301	VHiTDA7056/-1	J	Audio Output	AP
IC302	VHiTDA7056/-1	J	Audio Output	AP
IC451	VHiTA7348P/-1	J		AK
IC501	RH-iX0640CEZZ	J	Vertical Output	AK
IC602	VHiTA7809S/-1	J	8V Regulator	AE
⚠ IC751	RH-iX1779CEZZ	J	Power Regulator	AR
IC801	VHiTDA8362/3E	J	Video/Chroma	AW
IC802	VHiTDA4661/-1	J		AS
IC901	VHiTDA8395/-1	J		AY
IC1001	RH-iX2321CEN1	J	Microprocessor	AY
IC1002	VHiCAT93C46-1	J	Memory	AN
IC1003	RH-iX0037CEZZ	J	Zener IC	AF
IC1004	VHiPST529C2-1	J	Reset Switch	AD
IC1005	VHiUPC78L05-4	J	5V Regulator	AD
IC2301	VHiLA7975//-1	J		AL

TRANSISTORS

Q201	VS2SC1906//1E	J	2SC1906	AC
Q202	VS2SA1015Y/1E	J	2SA1015(Y)	AC
Q203	VS2SA1015Y/1E	J	2SA1015(Y)	AC
Q206	VS2SC3402//-1	J	2SC3402	AB
Q207	VS2SC3402//-1	J	2SC3402	AB
Q210	VS2SA1015Y/1E	J	2SA1015(Y)	AC

PWB-A DUNTK8185WEW4
MOTHER UNIT (Continued)

TRANSISTORS (Continued)

Ref. No.	Part No.	★	Description	Code
Q211	VS2SA1015Y/1E	J	2SA1015(Y)	AC
Q212	VS2SA1015Y/1E	J	2SA1015(Y)	AC
Q302	VS2SC945AP/-1	J	2SC945A(P)	AB
Q303	VS2SC945AP/-1	J	2SC945A(P)	AB
Q304	VS2SD880-G/-1	J	2SD880	AF
Q307	VS2SC3402//-1	J	2SC3402	AB
Q356	VS2SC3402//-1	J	2SC3402	AB
Q601	VS2SC2271E/-1	J	2SC2271(E)	AD
⚠ Q602	VS2SD2095//1E	J	2SD2095	AN
⚠ Q603	VS2SA1015Y/1E	J	2SA1015(Y)	AC
Q605	VS2SA1348//-1	J	2SA1348(Y)	AB
Q613	VS2SA1015Y/1E	J	2SA1015(Y)	AC
⚠ Q701	VS2SD1884//-1	J	2SD1884	AN
⚠ Q702	VS2SC945AP/-1	J	2SC945A(P)	AB
Q801	VS2SA1015Y/1E	J	2SA1015(Y)	AC
Q802	VS2SA1015Y/1E	J	2SA1015(Y)	AC
Q803	VS2SA1015Y/1E	J	2SA1015(Y)	AC
Q804	VS2SC945AP/-1	J	2SC945A(P)	AB
Q1001	VS2SC383-WT-1	J	2SC383(WT)	AE
Q1002	VS2SC3402//-1	J	2SC3402	AB
Q1003	VS2SA1348//-1	J	2SA1348	AB
Q1004	VS2SC3399//-1	J	2SC3399	AB
Q1005	VS2SC3402//-1	J	2SC3402	AB
Q1006	VS2SC3402//-1	J	2SC3402	AB
Q1007	VS2SC3402//-1	J	2SC3402	AB
Q1008	VS2SC3402//-1	J	2SC3402	AB
Q1011	VS2SC945AP/-1	J	2SC945A(P)	AB
Q1012	VS2SC945AP/-1	J	2SC945A(P)	AB
Q2301	VS2SC3402//-1	J	2SC3402	AB
Q2302	VS2SC3402//-1	J	2SC3402	AB
Q2303	VS2SC3402//-1	J	2SC3402	AB

DIODES

Ref. No.	Part No.	★	Description	Code
D201	VHD1SS152//-1	J	1SS152	AA
D202	VHD1SS152//-1	J	1SS152	AA
D207	RH-EX0030GEZZ	J	Zener Diode	AB
D209	VHD1SS119//1E	J	1SS119	AA
D214	VHD1SS119//1E	J	1SS119	AA
D222	RH-EX0312CEZZ	J	Zener Diode, 9V	AA
D302	RH-DX0247CEZZ	J		AE
D303	VHD1SS119//1E	J	1SS119	AA
⚠ D304	VHD1SS119//1E	J	1SS119	AA
D307	VHD1SS119//1E	J	1SS119	AA
D401	VHD1SS119//1E	J	1SS119	AA
D407	VHD1SS119//1E	J	1SS119	AA
D501	RH-DX0279CEZZ	J	1N4005	AB
D502	RH-DX0127CEZZ	J	1S5295G	AC
D505	VHD1SS119//1E	J	1SS119	AA
D506	VHD1SS119//1E	J	1SS119	AA
D507	VHD1SS119//1E	J	1SS119	AA

DIODES (Continued)

Ref. No.	Part No.	★	Description	Code
D509	VHD1SS119//1E	J	1SS119	AA
D602	RH-EX0310CEZZ	J	Zener Diode	AA
D603	RH-DX0073CEZZ	J	RH1Z	AD
D604	RH-DX0279CEZZ	J	1N4005	AB
⚠ D606	VHD1SS119//1E	J	1SS119	AA
⚠ D607	RH-EX0340CEZZ	J	Zener Diode, 22V	AB
⚠ D608	RH-EX0297CEZZ	J	Zener Diode	AA
⚠ D609	VHD1SS119//1E	J	1SS119	AA
D611	VHD1SS119//1E	J	1SS119	AA
D612	VHD1SS119//1E	J	1SS119	AA
⚠ D618	VHD1SS119//1E	J	1SS119	AA
⚠ D619	RH-DX0279CEZZ	J	1N4005	AB
D623	RH-EX0310CEZZ	J	Zener Diode, 8.2V	AA
⚠ D637	VHD1SS119//1E	J	1SS119	AA
D639	VHD1SS119//1E	J	1SS119	AA
⚠ D701	RH-DX0055TAZZ	J		AD
⚠ D702	RH-DX0055TAZZ	J		AD
⚠ D703	RH-DX0055TAZZ	J		AD
⚠ D704	RH-DX0055TAZZ	J		AD
⚠ D705	RH-DX0130CEZZ	J	EU-1Z	AE
⚠ D706	RH-DX0130CEZZ	J	EU-1Z	AE
⚠ D707	RH-DX0164CEZZ	J		AC
⚠ D708	RH-EX0639CEZZ	J	Zener Diode, 3.9V	AB
⚠ D709	RH-DX0302CEZZ	J		AC
⚠ D710	RH-DX0027CEZZ	J		AE
⚠ D712	RH-DX0130CEZZ	J	EU-1Z	AE
⚠ D715	RH-EX0019TAZZ	J	Zener Diode	AB
D732	RH-DX0388CEZZ	J		AE
D733	RH-DX0302CEZZ	J		AC
D805	RH-EX0274CEZZ	J	Zener Diode, 3V	AA
D807	VHD1SS119//1E	J	1SS119	AA
D808	VHD1SS119//1E	J	1SS119	AA
D809	VHD1SS119//1E	J	1SS119	AA
D810	VHD1SS119//1E	J	1SS119	AA
D812	RH-DX0005GEZZ	J		AA
D1001	RH-PX0290CEZZ	J	LED, Red/Green	AC
D1004	VHD1SS119//1E	J	1SS119	AA
D1005	VHD1SS119//1E	J	1SS119	AA
D1011	VHD1SS119//1E	J	1SS119	AA
D1015	VHD1SS119//1E	J	1SS119	AA
D1018	VHD1SS119//1E	J	1SS119	AA
D1022	VHD1SS119//1E	J	1SS119	AA
D1024	RH-EX0286CEZZ	J	Zener Diode	AA
D1038	VHD1SS119//1E	J	1SS119	AA
D1039	VHD1SS119//1E	J	1SS119	AA
D1053	VHD1SS119//1E	J	1SS119	AA
D1054	VHD1SS119//1E	J	1SS119	AA
D1056	RH-EX0297CEZZ	J	Zener Diode, 5.6V	AA
D1057	RH-EX0297CEZZ	J	Zener Diode, 5.6V	AA
D1058	RH-EX0297CEZZ	J	Zener Diode, 5.6V	AA
D2301	VHD1SS119//1E	J	1SS119	AA
D2302	VHD1SS119//1E	J	1SS119	AA
⚠ VA702	RH-VX0033CEZZ	J	Varistor	AD

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MOTHER UNIT (Continued)

PACKAGED CIRCUITS

Ref. No.	Part No.	★	Description	Code
⚠ PR701	RMPTP0061CEZZ	J	Positive Coefficient Thermistor	AV
X802	RCRSB0008PEZZ	R	Crystal, 4.43 MHz	AH
X803	RCRSB0009PEZZ	R	Crystal, 3.58 MHz	AL

COILS AND TRANSFORMERS

Ref. No.	Part No.	★	Description	Code
CF301	RFiLC0084CEZZ	J	Ceramic Filter, 6.0MHz	AF
CF304	RFiLC0320CEZZ	J	Ceramic Filter, 4.5MHz	AE
CF351	RFiLC0320CEZZ	J	Ceramic Filter, 4.5MHz	AE
CF451	RFiLC0150CEZZ	J	Ceramic Filter, 5.5/6.0MHz	AF
CF452	RFiLC0024CEZZ	J	Ceramic Filter, 6.5MHz	AE
CF453	RFiLC0002AJZZ	R	Ceramic Filter, 4.5MHz	AD
CF1001	RFiLC0094GEZZ	J	Ceramic Filter, μ-com CLK	AC
CF2301	RFiLA0074CEZZ	J	Ceramic Filter, 500kHz	AE
CF2302	RFiLA0075CEZZ	J	Ceramic Filter, 1.5MHz	AK
L203	VP-XF1R2K0000	J	Coil, 1.2μH	AB
L212	VP-DF270K0000	J	Coil, 27μH	AB
L218	VP-XF1R2K0000	J	Coil, 1.2μH	AB
L305	VP-CF3R3K0000	J	Coil, 3.3μH	AB
L451	VP-XF6R8K0000	J	Coil, 6.8μH	AB
L452	VP-XF150K0000	J	Coil, 15μH	AB
L453	VP-XF150K0000	J	Coil, 15μH	AB
L601	RCiLZ0007PEZZ	R	Linearity Coil	AK
L602	RCiLP0088CEZZ	J	3.3mH	AG
L609	VP-CF1R0M0000	J	Coil, 1μH	AB
L632	RCiLP0050CEZZ	J	Peaking Coil	AE
⚠ L701	RCiLF0007PEZZ	R	Line Filter	AL
⚠ L702	RCiLF0087CEZZ	J	Line Filter	AL
⚠ L705	VP-CF3R3K0000	J	Coil, 3.3μH	AB
⚠ L712	VP-CF100K0000	J	Coil, 10μH	AB
L901	VP-XF8R2K0000	J	Coil, 8.2μH	AB
L2304	VP-XF150K0000	J	Coil, 15μH	AB
SF201	RFiLC0203CEZZ	J	Surface Acoustic Wave Filter	AN
T203	RCiLi0543CEZZ	J	S.A.W. Matching	AD
T205	RCiLD0228CEZZ	J	PIF Detector	AE
⚠ T601	RTRNZ0026PEZZ	R	Horizontal Drive Trans.	AH
⚠ T602	RTRNF0069PEZZ	R	F.B.T. (Flyback Trans.)	BF
⚠ T701	RTRNZ0037PEZZ	R	Power Regulator Trans.	AY
T1001	RCiLB0008PEZZ	R	On Screen Display	AG

CONTROLS

Ref. No.	Part No.	★	Description	Code
R248	RVR-M4626GEZZ	J	10k(B) RF-AGC	AB
R420	RVR-M4626GEZZ	J	10k(B) Sub-Contrast	AB
R509	RVR-M4616GEZZ	J	220(B) Vertical Size	AB
R514	RVR-M4624GEZZ	J	4.7k(B) Vertical Linearity	AB
R613	RVR-M4626GEZZ	J	10k(B) Horiz. Center	AB
⚠ R711	RVR-M4324CEZZ	J	220(B) 115V Adjust	AC

CAPACITORS

Ref. No.	Part No.	★			Description	Code
C201	VCKYMN1CY103N	J	0.01	16V	Ceramic	AA
C202	VCKYMN1CY103N	J	0.01	16V	Ceramic	AA
C203	VCKYMN1CY103N	J	0.01	16V	Ceramic	AA
C205	VCFYHA1HA474J	J	0.47	50V	M. Polyester	AB
C206	VCQYTA1HM104K	J	0.1	50V	Mylar	AC
C208	VCEAGA1AW477M	J	470	10V	Electrolytic	AC
C209	VCEAGA1HW105M	J	1	50V	Electrolytic	AC
C211	VCKYMN1CY103N	J	0.01	16V	Ceramic	AA
C212	VCKYMN1HB102K	J	1000p	50V	Ceramic	AA
C213	VCKYD41CY103N	J	0.01	16V	Ceramic	AA
C218	VCKYMN1HB102K	J	1000p	50V	Ceramic	AA
C220	VCSATA1VE225K	J	2.2	35V	Tantalum	AC
C225	VCEAGA1HW105M	J	1	50V	Electrolytic	AB
C226	VCKYMN1CY103N	J	0.01	16V	Ceramic	AA
C231	VCQYTA1HM104K	J	0.1	50V	Mylar	AC
C232	VCEAGA1AW107M	J	100	10V	Electrolytic	AB
C233	VCEAGA1CW106M	J	10	16V	Electrolytic	AA
C239	VCQYTA1HM104K	J	0.1	50V	Mylar	AC
C240	VCEAGA1AW477M	J	470	10V	Electrolytic	AC
C242	VCKYMN1CY103N	J	0.01	16V	Ceramic	AA
C244	VCCCMN1HH8R2K	J	8.2p	50V	Ceramic	AA
C250	VCKYMN1CY103N	J	0.01	16V	Ceramic	AA
C259	VCKYMN1CY103N	J	0.01	16V	Ceramic	AA
C269	VCKYMN1CY103N	J	0.01	16V	Ceramic	AA
C300	VCEAGA1CW106M	J	10	16V	Electrolytic	AA
C303	VCEAGA1HW105M	J	1	50V	Electrolytic	AC
C304	VCEAGA1HW335M	J	3.3	50V	Electrolytic	
C307	VCEAGA1HW105M	J	1	50V	Electrolytic	AC
C309	VCQYTA1HM104K	J	0.1	50V	Mylar	AC
C311	VCKYPA2HB102K	J	0.001	500V	Ceramic	AA
C312	VCEAGA1EW108M	J	1000	25V	Electrolytic	AD
C313	VCEAGA1HW104M	J	0.1	50V	Electrolytic	AA
C314	VCQYTA1HM272K	J	2700p	50V	Mylar	AA
C319	VCKYD41HB102K	J	1000p	50V	Ceramic	AA
C326	VCEAGA1HW225M	J	2.2	50V	Electrolytic	AB
C327	VCQYTA1HM103K	J	0.01	50V	Mylar	AB
C328	VCEAGA1EW477M	J	470	25V	Electrolytic	AD
C329	VCKYMN1CY103N	J	0.01	16V	Ceramic	AA
C335	VCKYMN1CY103N	J	0.01	16V	Ceramic	AA
C338	VCKYMN1CY103N	J	0.01	16V	Ceramic	AA
C404	VCQYTA1HM473K	J	0.047	50V	Mylar	AB
C406	VCQYTA1HM473K	J	0.047	50V	Mylar	AB
C407	VCKYMN1CY103N	J	0.01	16V	Ceramic	AA
C456	VCEAGA1CW106M	J	10	16V	Electrolytic	AA
C457	VCEAGA1CW106M	J	10	16V	Electrolytic	AA
C460	VCKYMN1CY103N	J	0.01	16V	Ceramic	AA
C461	VCEAGA1AW476M	J	47	10V	Electrolytic	AA
C466	VCEAGA1CW106M	J	10	16V	Electrolytic	AA
C502	VCKYPA1HB471K	J	470p	50V	Ceramic	AA
C503	VCQYTA1HM272K	J	2700p	50V	Mylar	AA
C504	VCKYMN1HB102K	J	0.001	50V	Ceramic	AA
C505	VCQYTA1HM104K	J	0.1	50V	Mylar	AC
C506	VCEAGA1EW108M	J	1000	25V	Electrolytic	AD
C507	VCEAGA1EW227M	J	220	25V	Electrolytic	AC

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MOTHER UNIT (Continued)

CAPACITORS (Continued)

Ref. No.	Part No.	★	Description	Code
C508	VCSATA1VE225K	J	2.2 35V Tantalum	AC
C509	VCQYTA1HM104K	J	0.1 50V Mylar	AC
C510	VCEAGA1VW477M	J	470 35V Electrolytic	AD
C511	VCKYPA2HB102K	J	0.001 500V Ceramic	AA
C512	VCEAGA1HW105M	J	1 50V Electrolytic	AC
C514	VCSATA1VE104K	J	0.1 35V Tantalum	AC
C515	VCKYPA1HB472K	J	4700p 50V Ceramic	AA
C523	VCKYMN1CY103N	J	0.01 16V Ceramic	AA
C601	VCFYHA1HA334J	J	0.33 50V M. Polyester	AC
C602	VCQYTA1HM104K	J	0.1 50V Mylar	AC
C606	VCQYTA1HM222K	J	2200p 50V Mylar	AA
C610	VCFYSB2EB823J	J	0.082 250V M. Polyester	AD
C611	VCKYPA2HB102K	J	0.001 500V Ceramic	AA
C612	RC-KZ0040CEZZ	J	820p 2kV Ceramic	AD
C613	VCFPPD2DB564J	J	0.56 200V M. Polyester	AF
C614	VCQPSC2DA104J	J	0.1 200V Mylar	AC
C615	VCQPSD2DA224J	J	0.22 200V Mylar	AD
C616	VCFPPD3CA103J	J	0.01 1.6kV M. Polyester	AF
C617	VCQYTA1HM104K	J	0.1 50V Mylar	AC
C619	VCEAGA2AW106M	J	10 100V Electrolytic	AC
⚠ C620	VCEAGA1HW105M	J	1 50V Electrolytic	AC
⚠ C621	VCEAGA0JW337M	J	330 6.3V Electrolytic	AB
⚠ C622	VCEAGA1HW105M	J	1 50V Electrolytic	AC
C628	VCKYPA2HB221K	J	220p 500V Ceramic	AA
C630	VCKYMN1CY103N	J	0.01 16V Ceramic	AA
C636	VCEAGA1CW476M	J	47 16V Electrolytic	AB
C648	VCEAGA1AW107M	J	100 10V Electrolytic	AB
C649	VCKYMN1CX472M	J	4700p 16V Ceramic	AA
C650	VCEAGA1HW105M	J	1 50V Electrolytic	AC
C662	VCEAGA1CW106M	J	10 16V Electrolytic	AA
C667	VCEAGA1AW107M	J	100 10V Electrolytic	AB
⚠ C701	RC-FZ0066CEZZ	J	0.1 AC250V M. Polyester	AE
⚠ C703	RC-KZ0029CEZZ	J	0.01 AC250V Ceramic	AC
⚠ C704	RC-KZ0029CEZZ	J	0.01 AC250V Ceramic	AC
⚠ C705	RC-KZ0029CEZZ	J	0.01 AC250V Ceramic	AC
⚠ C706	RC-KZ0029CEZZ	J	0.01 AC250V Ceramic	AC
⚠ C707	RC-EZ0191CEZZ	J	330 400V Electrolytic	AS
⚠ C708	RC-KZ0029CEZZ	J	0.01 AC250V Ceramic	AC
⚠ C709	VCEAGA1EW107M	J	100 25V Electrolytic	AD
⚠ C710	VCKYPA2HB102K	J	1000p 500V Ceramic	AA
⚠ C711	RC-QZA471TAYJ	J	470p Mylar	AB
⚠ C712	VCFYHA1HA684J	J	0.68 50V M. Polyester	AD
⚠ C713	VCKYPA2HB102K	J	1000p 500V Ceramic	AA
⚠ C714	VCQYTA1HM563K	J	0.056 50V Mylar	AB
⚠ C715	VCEAGA1HW105M	J	1 50V Electrolytic	AC
⚠ C716	VCEAGA1HW105M	J	1 50V Electrolytic	AC
⚠ C717	VCQPSC2JA333K	J	0.033 630V Porypro Film	AB
⚠ C718	VCKYPH3DB561K	J	560p 2kV Ceramic	AC
⚠ C719	VCQYTA1HM273K	J	0.027 50V Mylar	AB
⚠ C720	VCEAGA1JW476M	J	47 63V Electrolytic	AB
⚠ C721	RC-KZ0024CEZZ	J	1000p 2kV Ceramic	AC

CAPACITORS (Continued)

Ref. No.	Part No.	★	Description	Code
⚠ C723	VCKYPA2HB102K	J	1000p 500V Ceramic	AA
⚠ C724	RC-KZ0029CEZZ	J	0.01 AC250V Ceramic	AC
⚠ C725	VCFYHA1HA474J	J	0.47 50V M. Polyester	AD
⚠ C726	VCKYPA1HB681K	J	680p 50V Ceramic	AA
⚠ C729	VCEAGA1CW477M	J	470 16V Electrolytic	AC
C731	RC-EZ0069CEZZ	J	220 160V Electrolytic	AG
C732	RC-KZ0024CEZZ	J	1000p 2kV Ceramic	AC
C733	VCKYPA2HB102K	J	0.001 500V Ceramic	AA
C734	VCEAGA1EW477M	J	470 25V Electrolytic	AD
⚠ C736	RC-KZ0029CEZZ	J	0.01 AC250V Ceramic	AC
C737	VCEAGH2CW107M	J	100 160V Electrolytic	AE
⚠ C741	VCKYPA2HB472K	J	4700p 500V Ceramic	AB
⚠ C742	VCFYHA1HA394J	J	0.39 50V M. Polyester	AC
⚠ C747	RC-KZ0265CEZZ	J	1500p 4kV Ceramic	AE
C811	VCQYTA1HM103K	J	0.01 50V Mylar	AB
C812	VCQYTA1HM103K	J	0.01 50V Mylar	AB
C813	VCQYTA1HM103K	J	0.01 50V Mylar	AB
C815	VCEAGA1EW475M	J	4.7 25V Electrolytic	AA
C817	VCQYTA1HM104K	J	0.1 50V Mylar	AC
C818	VCQYTA1HM104K	J	0.1 50V Mylar	AC
C819	VCCCMN1HH180J	J	18p 50V Ceramic	AA
C820	VCCCMN1HH180J	J	18p 50V Ceramic	AA
C821	VCKYPA1HB472K	J	4700p 50V Ceramic	AA
C822	VCEAGA1HW104M	J	0.1 50V Electrolytic	AA
C823	VCEAGA1AW476M	J	47 10V Electrolytic	AA
C825	VCKYPA1HB102K	J	1000p 50V Ceramic	AA
C826	VCKYPA1HB102K	J	1000p 50V Ceramic	AA
C827	VCKYMN1CY103N	J	0.01 16V Ceramic	AA
C836	VCCSMN1HL390J	J	39p 50V Ceramic	AA
C840	VCEAGA1AW226M	J	22 10V Electrolytic	AA
C885	VCEAGA1EW337M	J	330 25V Electrolytic	AC
C900	VCCSMN1HL330J	J	33p 50V Ceramic	AA
C901	VCKYMN1CY103N	J	0.01 16V Ceramic	AA
C903	VCQYTA1HM104K	J	0.1 50V Mylar	AC
C904	VCFYHA1HA224J	J	0.22 50V M. Polyester	AB
C909	VCCCPA1HH470J	J	47p 50V Ceramic	AA
C1001	VCEAGA1EW475M	J	4.7 25V Electrolytic	AA
C1002	VCEAGA1EW475M	J	4.7 25V Electrolytic	AA
C1003	VCEAGA1EW475M	J	4.7 25V Electrolytic	AA
C1004	VCEAGA1EW475M	J	4.7 25V Electrolytic	AA
C1006	VCEAGA1HW335M	J	3.3 50V Electrolytic	AB
C1007	VCQYTA1HM104K	J	0.1 50V Mylar	AC
C1008	VCQYTA1HM104K	J	0.1 50V Mylar	AC
C1009	VCKYMN1HB221K	J	220p 50V Ceramic	AA
C1011	VCKYMN1HB101K	J	100p 50V Ceramic	AA
C1013	VCEAGA1HW106M	J	10 50V Electrolytic	AC
C1014	VCKYMN1HB151K	J	150p 50V Ceramic	AA
C1015	VCKYMN1CY103N	J	0.01 16V Ceramic	AA
C1016	VCFYHA1HA334J	J	0.33 50V M. Polyester	AC
C1017	VCFYHA1HA104J	J	0.1 50V M. Polyester	AB
C1022	VCEAGA1AW476M	J	47 10V Electrolytic	AA
C1023	VCKYMN1HB151K	J	150p 50V Ceramic	AA
C1024	VCKYMN1HB151K	J	150p 50V Ceramic	AA
C1025	VCKYMN1HB151K	J	150p 50V Ceramic	AA

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MOTHER UNIT (Continued)

CAPACITORS (Continued)

C1026	VCKYMN1HB221K	J	220p	50V	Ceramic	AA
C1028	VCKYMN1CY103N	J	0.01	16V	Ceramic	AA
C1030	VCKYMN1HB221K	J	220p	50V	Ceramic	AA
C1033	VCKYD41HB221K	J	220p	50V	Ceramic	AA
C1038	VCEAGA0JW107M	J	100	6.3V	Electrolytic	AB
C1044	VCKYD41HB221K	J	220p	50V	Ceramic	AA
C1045	VCKYD41HB221K	J	220p	50V	Ceramic	AA
C1046	VCKYD41HB221K	J	220p	50V	Ceramic	AA
C1047	VCKYD41HB221K	J	220p	50V	Ceramic	AA
C1048	VCEAGA1EW475M	J	4.7	25V	Electrolytic	AA
C1049	VCEAGA1CW106M	J	10	16V	Electrolytic	AA
C1052	VCKYMN1HB471K	J	470p	50V	Ceramic	AA
C1054	VCQYTA1HM104K	J	0.1	50V	Mylar	AC
C1058	VCFYHA1HA474J	J	0.47	50V	M. Polyester	AD
C1060	VCEAGA1CW106M	J	10	16V	Electrolytic	AA
C2301	VCKYMN1CY103N	J	0.01	16V	Ceramic	AA
C2316	VCCCPA1HH150J	J	15p	50V	Ceramic	AA
C2317	VCCCPA1HH560J	J	56p	50V	Ceramic	AA
C2320	VCKYD41HB101K	J	0.01	16V	Ceramic	AA

RESISTORS

R202	VRD-MN2BE562J	J	5.6k	1/8W	Carbon	AA
R203	VRD-MN2BE392J	J	3.9k	1/8W	Carbon	AA
R204	VRD-MN2BE220J	J	22	1/8W	Carbon	AA
R205	VRD-MN2BE151J	J	150	1/8W	Carbon	AA
R206	VRD-MN2BE332J	J	3.3k	1/8W	Carbon	AA
R207	VRD-RA2EE221J	J	220	1/4W	Carbon	AA
R208	VRD-MN2BE102J	J	1k	1/8W	Carbon	AA
R209	VRD-MN2BE151J	J	150	1/8W	Carbon	AA
R210	VRD-MN2BE561J	J	560	1/8W	Carbon	AA
R211	VRD-MN2BE561J	J	560	1/8W	Carbon	AA
R214	VRD-RA2EE681J	J	680	1/4W	Carbon	AA
R215	VRD-MN2BE682J	J	6.8k	1/8W	Carbon	AA
R217	VRD-MN2BE822J	J	8.2k	1/8W	Carbon	AA
R218	VRD-RA2BE561J	J	560	1/8W	Carbon	AA
R223	VRD-MN2BE102J	J	1k	1/8W	Carbon	AA
R224	VRD-MN2BE103J	J	10k	1/8W	Carbon	AA
R225	VRD-MN2BE223J	J	22k	1/8W	Carbon	AA
R230	VRD-RA2BE103J	J	10k	1/8W	Carbon	AA
R232	VRD-RA2EE681J	J	680	1/4W	Carbon	AA
R233	VRD-MN2BE474J	J	470k	1/8W	Carbon	AA
R236	VRD-MN2BE472J	J	4.7k	1/8W	Carbon	AA
R237	VRD-MN2BE472J	J	4.7k	1/8W	Carbon	AA
R238	VRD-MN2BE472J	J	4.7k	1/8W	Carbon	AA
R240	VRD-MN2BE104J	J	100k	1/8W	Carbon	AA
R241	VRD-MN2BE684J	J	680k	1/8W	Carbon	AA
R244	VRD-MN2BE393J	J	39k	1/8W	Carbon	AA
R247	VRD-MN2BE123J	J	12k	1/8W	Carbon	AA
R248	*See Controls*					
R252	VRD-MN2BE102J	J	1k	1/8W	Carbon	AA

RESISTORS (Continued)

R254	VRD-MN2BE333J	J	33k	1/8W	Carbon	AA
R255	VRD-MN2BE473J	J	47k	1/8W	Carbon	AA
R256	VRD-MN2BE104J	J	100k	1/8W	Carbon	AA
R261	VRD-MN2BE473J	J	47k	1/8W	Carbon	AA
R263	VRD-MN2BE681J	J	680	1/8W	Carbon	AA
R277	VRD-MN2BE123J	J	12k	1/8W	Carbon	AA
R290	VRD-RA2BE682J	J	6.8k	1/8W	Carbon	AA
R291	VRD-RA2BE223J	J	22k	1/8W	Carbon	AA
R292	VRD-RA2BE103J	J	10k	1/8W	Carbon	AA
R301	VRD-RA2BE391J	J	390	1/8W	Carbon	AA
R315	VRD-MN2BE822J	J	8.2k	1/8W	Carbon	AA
R316	VRD-MN2BE822J	J	8.2k	1/8W	Carbon	AA
R317	VRD-RA2BE472J	J	4.7k	1/8W	Carbon	AA
⚠ R318	VRD-MN2BE682J	J	6.8k	1/8W	Carbon	AA
⚠ R319	VRD-MN2BE104J	J	100k	1/8W	Carbon	AA
R320	VRD-MN2BE822J	J	8.2k	1/8W	Carbon	AA
R321	VRD-MN2BE333J	J	33k	1/8W	Carbon	AA
R323	VRD-RA2BE102J	J	1k	1/8W	Carbon	AA
R327	VRN-KT3LB2R7J	J	2.7	3W	Metal Film	AF
R335	VRD-MN2BE102J	J	1k	1/8W	Carbon	AA
R336	VRD-MN2BE102J	J	1k	1/8W	Carbon	AA
R337	VRD-RA2BE223J	J	22k	1/8W	Carbon	AA
R340	VRD-MN2BE103J	J	10k	1/8W	Carbon	AA
R341	VRD-RA2BE472J	J	4.7k	1/8W	Carbon	AA
R345	VRD-RA2BE223J	J	22k	1/8W	Carbon	AA
R348	VRD-RA2BE223J	J	22k	1/8W	Carbon	AA
R349	VRD-MN2BE392J	J	3.9k	1/8W	Carbon	AA
R389	VRD-RA2BE103J	J	10k	1/8W	Carbon	AA
R399	VRN-VV3DB1R5J	J	1.5	2W	Metal Film	AB
R401	VRD-RA2EE820J	J	82	1/4W	Carbon	AA
R410	VRD-MN2BE183J	J	18k	1/8W	Carbon	AA
R411	VRD-MN2BE223J	J	22k	1/8W	Carbon	AA
R412	VRD-MN2BE333J	J	33k	1/8W	Carbon	AA
R414	VRD-MN2BE223J	J	22k	1/8W	Carbon	AA
R420	*See Controls*					
R422	VRD-MN2BE823J	J	82k	1/8W	Carbon	AA
R437	VRD-MN2BE473J	J	47k	1/8W	Carbon	AA
R451	VRD-MN2BE221J	J	220	1/8W	Carbon	AA
R463	VRD-MN2BE271J	J	270	1/8W	Carbon	AA
R465	VRD-MN2BE330J	J	33	1/8W	Carbon	AA
R482	VRD-MN2BE680J	J	68	1/8W	Carbon	AA
R504	VRD-MN2BE221J	J	220	1/8W	Carbon	AA
R505	VRD-MN2BE393J	J	39k	1/8W	Carbon	AA
R506	VRD-MN2BE392J	J	3.9k	1/8W	Carbon	AA
R507	VRD-RM2HD182J	J	1.8k	1/2W	Carbon	AA
R508	VRD-MN2BE123J	J	12k	1/8W	Carbon	AA
R509	*See Controls*					
R510	VRD-RM2HD1R8J	J	1.8	1/2W	Carbon	AA
R511	VRD-MN2BE103J	J	10k	1/8W	Carbon	AA
R512	VRD-MN2BE472J	J	4.7k	1/8W	Carbon	AA
R513	VRD-RA2BE102J	J	1k	1/8W	Carbon	AA
R514	*See Controls*					
⚠ R515	RR-XZ0035TAZZ	J	22	1/4W	Fuse Resistor	AB
R516	VRD-RM2HD331J	J	330	1/2W	Carbon	AA

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MOTHER UNIT (Continued)

RESISTORS (Continued)

Ref. No.	Part No.	★	Description	Code
R517	VRD-RM2HD222J	J	2.2k 1/2W Carbon	AA
R520	VRD-RA2EE275J	J	2.7M 1/4W Carbon	AA
⚠ R521	RR-XZ0029CEZZ	J	3.3 1/2W Fuse Resistor	AB
R525	VRD-MN2BE681J	J	680 1/8W Carbon	AA
R526	VRD-MN2BE123J	J	12k 1/8W Carbon	AA
R527	VRD-RA2EE105J	J	1M 1/4W Carbon	AA
R552	VRD-RA2EE122J	J	1.2k 1/4W Carbon	AA
R601	VRD-RA2HD5R6J	J	5.6 1/2W Carbon	AA
R608	VRD-RM2HD472J	J	4.7k 1/2W Carbon	AA
R609	VRS-SV3LB392J	J	3.9k 3W Metal Oxide	AC
R611	VRW-KV4AC120K	J	12 10W Cement	AD
⚠ R612	RR-XZ0020CEZZ	J	39 1/4W Fuse Resistor	AB
R613	*See Controls*			
R614	VRD-MN2BE824J	J	820k 1/8W Carbon	AA
R616	VRD-RA2BE104J	J	100k 1/8W Carbon	AA
R617	VRD-RM2HD390J	J	39 1/2W Carbon	AA
R618	VRD-RM2HD102J	J	1k 1/2W Carbon	AA
R619	VRD-MN2BE183J	J	18k 1/8W Carbon	AA
⚠ R620	RR-XZ0084CEZZ	J	1 1/4W Fuse Resistor	AB
R621	VRN-VV3DB1R8J	J	1.8 2W Metal Film	AB
R622	VRD-RM2HD223J	J	22k 1/2W Carbon	AA
⚠ R623	VRD-RA2EE125J	J	1.2M 1/4W Carbon	AA
⚠ R624	VRD-MN2BE274J	J	270k 1/8W Carbon	AA
R627	VRD-MN2BE221J	J	220 1/8W Carbon	AA
⚠ R628	VRD-MN2BE103J	J	10k 1/8W Carbon	AA
⚠ R629	VRD-MN2BE123J	J	12k 1/8W Carbon	AA
⚠ R630	VRD-RA2BE183J	J	18k 1/8W Carbon	AA
R634	VRD-RM2HD220J	J	22 1/2W Carbon	AA
⚠ R635	VRD-MN2BE223J	J	22k 1/8W Carbon	AA
R640	VRD-RM2HD682J	J	6.8k 1/2W Carbon	AA
R641	VRD-RA2BE273J	J	27k 1/8W Carbon	AA
R642	VRD-RM2HD222J	J	2.2k 1/2W Carbon	AA
R648	VRD-RM2HD1R8J	J	1.8 1/2W Carbon	AA
⚠ R649	VRD-MN2BE472J	J	4.7k 1/8W Carbon	AA
R650	VRD-MN2BE222J	J	2.2k 1/8W Carbon	AA
R653	VRD-RA2BE390J	J	39 1/8W Carbon	AA
R654	VRD-MN2BE153J	J	15k 1/8W Carbon	AA
R659	VRD-RA2BE151J	J	150 1/8W Carbon	AA
R671	VRD-MN2BE332J	J	3.3k 1/8W Carbon	AA
R674	VRS-VV3AB562J	J	5.6k 1W Metal Oxide	AA
R675	VRD-RA2BE184J	J	180k 1/8W Carbon	AA
R682	VRD-MN2BE122J	J	1.2k 1/8W Carbon	AA
R683	VRD-RA2BE122J	J	1.2k 1/8W Carbon	AA
R684	VRD-RM2HD104J	J	100k 1/2W Carbon	AA
R685	VRD-RA2BE822J	J	8.2k 1/8W Carbon	AA
R688	VRD-RA2EE272J	J	2.7k 1/4W Carbon	AA
R689	VRD-RA2EE183J	J	18k 1/4W Carbon	AA
⚠ R701	VRW-KV3HC1R8K	J	1.8 5W Cement	AC
⚠ R702	VRW-KQ4AC2R7K	J	2.7 10W Cement	AE
⚠ R703	RR-WZ0151CEZZ	J	12k 7W Cement	AD
⚠ R704	VRN-RV3DB4R7J	J	4.7 2W Metal Film	AB

RESISTORS (Continued)

Ref. No.	Part No.	★	Description	Code
⚠ R705	VRS-VV3AB3R3J	J	3.3 1W Metal Oxide	AA
⚠ R706	VRD-RA2BE224J	J	220k 1/8W Carbon	AA
⚠ R707	VRD-MN2BE270J	J	27 1/8W Carbon	AA
⚠ R708	VRS-SV3LB124J	J	120k 3W Metal Oxide	AC
⚠ R710	VRD-RA2BE392J	J	3.9k 1/8W Carbon	AA
⚠ R711	*See Controls*			
⚠ R712	VRD-RA2BE751J	J	750 1/8W Carbon	AA
⚠ R713	VRD-RA2EE225J	J	2.2M 1/4W Carbon	AA
⚠ R714	VRD-RA2BE474J	J	470k 1/8W Carbon	AA
⚠ R715	VRD-RA2BE153J	J	15k 1/8W Carbon	AA
⚠ R716	VRD-RA2BE180J	J	18 1/8W Carbon	AA
⚠ R717	VRD-RA2BE101J	J	100 1/8W Carbon	AA
⚠ R718	VRN-VV3ABR22J	J	0.22 1W Metal Film	AA
⚠ R719	VRC-UA2HG825K	J	8.2M 1/2W Solid	AA
⚠ R720	VRC-UA2HG825K	J	8.2M 1/2W Solid	AA
⚠ R721	VRD-RM2HD1R0J	J	1 1/2W Carbon	AA
⚠ R722	VRN-SV2HCR27J	J	0.27 1/2W Metal Film	AA
⚠ R723	VRS-SV3LB272J	J	2.7k 3W Metal Oxide	AD
⚠ R724	VRD-MN2BE102J	J	1k 1/8W Carbon	AA
⚠ R731	RR-XZ0016CEZZ	J	1 1/2W Fuse Resistor	AB
⚠ R735	VRD-RM2HD184J	J	180k 1/2W Carbon	AA
⚠ R736	VRD-RM2HD184J	J	180k 1/2W Carbon	AA
R809	VRD-MN2BE101J	J	100 1/8W Carbon	AA
R811	VRD-MN2BE101J	J	100 1/8W Carbon	AA
R812	VRD-MN2BE101J	J	100 1/8W Carbon	AA
R816	VRD-MN2BE102J	J	1k 1/8W Carbon	AA
R817	VRD-MN2BE391J	J	390 1/8W Carbon	AA
R818	VRD-MN2BE391J	J	390 1/8W Carbon	AA
R819	VRD-MN2BE391J	J	390 1/8W Carbon	AA
R825	VRD-MN2BE333J	J	33k 1/8W Carbon	AA
R828	VRD-MN2BE683J	J	68k 1/8W Carbon	AA
R829	VRD-MN2BE104J	J	100k 1/8W Carbon	AA
R832	VRD-MN2BE271J	J	270 1/8W Carbon	AA
R833	VRD-MN2BE223J	J	22k 1/8W Carbon	AA
R837	VRD-MN2BE102J	J	1k 1/8W Carbon	AA
R838	VRD-MN2BE102J	J	1k 1/8W Carbon	AA
R839	VRD-MN2BE102J	J	1k 1/8W Carbon	AA
R840	VRD-MN2BE821J	J	820 1/8W Carbon	AA
R841	VRD-MN2BE821J	J	820 1/8W Carbon	AA
R842	VRD-MN2BE821J	J	820 1/8W Carbon	AA
R844	VRD-RM2HD821J	J	820 1/2W Carbon	AA
R849	VRD-MN2BE153J	J	15k 1/8W Carbon	AA
R892	VRD-RA2BE103J	J	10k 1/8W Carbon	AA
R902	VRD-RA2BE331J	J	330 1/8W Carbon	AA
R1000	VRD-RA2BE103J	J	10k 1/8W Carbon	AA
R1005	VRD-MN2BE392J	J	3.9k 1/8W Carbon	AA
R1006	VRD-MN2BE183J	J	18k 1/8W Carbon	AA
R1007	VRD-MN2BE682J	J	6.8k 1/8W Carbon	AA
R1008	VRD-MN2BE101J	J	100 1/8W Carbon	AA
R1009	VRD-RA2BE103J	J	10k 1/8W Carbon	AA
R1010	VRD-RA2BE103J	J	10k 1/8W Carbon	AA
R1011	VRD-RA2BE103J	J	10k 1/8W Carbon	AA
R1017	VRD-MN2BE223J	J	22k 1/8W Carbon	AA
R1019	VRD-MN2BE822J	J	8.2k 1/8W Carbon	AA

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MOTHER UNIT (Continued)

RESISTORS (Continued)

Ref. No.	Part No.	★	Description	Code
R1020	VRD-MN2BE222J	J	2.2k 1/8W Carbon	AA
R1021	VRD-MN2BE222J	J	2.2k 1/8W Carbon	AA
R1022	VRD-MN2BE472J	J	4.7k 1/8W Carbon	AA
R1025	VRD-MN2BE103J	J	10k 1/8W Carbon	AA
R1026	VRD-MN2BE333J	J	33k 1/8W Carbon	AA
R1027	VRD-MN2BE103J	J	10k 1/8W Carbon	AA
R1028	VRD-MN2BE684J	J	680k 1/8W Carbon	AA
R1029	VRD-RA2BE333J	J	33k 1/8W Carbon	AA
R1030	VRD-MN2BE333J	J	33k 1/8W Carbon	AA
R1031	VRD-MN2BE153J	J	15k 1/8W Carbon	AA
R1032	VRS-VV3DB153J	J	15k 2W Metal Oxide	AA
R1033	VRD-MN2BE682J	J	6.8k 1/8W Carbon	AA
R1036	VRD-RA2BE102J	J	1k 1/8W Carbon	AA
R1039	VRD-MN2BE153J	J	15k 1/8W Carbon	AA
R1040	VRD-MN2BE123J	J	12k 1/8W Carbon	AA
R1044	VRD-MN2BE103J	J	10k 1/8W Carbon	AA
R1046	VRD-MN2BE682J	J	6.8k 1/8W Carbon	AA
R1048	VRD-MN2BE102J	J	1k 1/8W Carbon	AA
R1050	VRD-MN2BE102J	J	1k 1/8W Carbon	AA
R1051	VRD-MN2BE182J	J	1.8k 1/8W Carbon	AA
R1052	VRD-RA2BE332J	J	3.3k 1/8W Carbon	AA
R1053	VRD-RA2BE332J	J	3.3k 1/8W Carbon	AA
R1054	VRD-RA2BE123J	J	12k 1/8W Carbon	AA
R1055	VRD-MN2BE683J	J	68k 1/8W Carbon	AA
R1056	VRD-MN2BE153J	J	15k 1/8W Carbon	AA
R1060	VRD-RM2HD821J	J	820 1/2W Carbon	AA
R1062	VRD-RA2EE681J	J	680 1/4W Carbon	AA
R1064	VRD-RA2BE103J	J	10k 1/8W Carbon	AA
R1065	VRD-MN2BE333J	J	33k 1/8W Carbon	AA
R1066	VRD-MN2BE682J	J	6.8k 1/8W Carbon	AA
R1069	VRD-RA2EE181J	J	180 1/4W Carbon	AA
R1073	VRD-MN2BE102J	J	1k 1/8W Carbon	AA
R1074	VRD-MN2BE472J	J	4.7k 1/8W Carbon	AA
R1078	VRD-MN2BE472J	J	4.7k 1/8W Carbon	AA
R1079	VRD-RA2BE103J	J	10k 1/8W Carbon	AA
R1089	VRD-MN2BE682J	J	6.8k 1/8W Carbon	AA
R1090	VRD-MN2BE682J	J	6.8k 1/8W Carbon	AA
R1091	VRD-MN2BE682J	J	6.8k 1/8W Carbon	AA
R1092	VRD-MN2BE682J	J	6.8k 1/8W Carbon	AA
R1093	VRD-RA2BE682J	J	6.8k 1/8W Carbon	AA
R1094	VRD-RA2BE682J	J	6.8k 1/8W Carbon	AA
R1095	VRD-RA2BE682J	J	6.8k 1/8W Carbon	AA
R1096	VRD-MN2BE682J	J	6.8k 1/8W Carbon	AA
R1098	VRD-MN2BE103J	J	10k 1/8W Carbon	AA
R1099	VRD-RA2BE332J	J	3.3k 1/8W Carbon	AA
R1102	VRD-RA2EE181J	J	180 1/4W Carbon	AA
R1105	VRD-MN2BE682J	J	6.8k 1/8W Carbon	AA
R1106	VRD-MN2BE103J	J	10k 1/8W Carbon	AA
R1108	VRD-RA2BE223J	J	22k 1/8W Carbon	AA
R1109	VRD-RA2BE223J	J	22k 1/8W Carbon	AA
R1110	VRD-MN2BE223J	J	22k 1/8W Carbon	AA
R1111	VRD-MN2BE223J	J	22k 1/8W Carbon	AA
R1114	VRD-MN2BE271J	J	270 1/8W Carbon	AA
R1116	VRD-RA2BE102J	J	1k 1/8W Carbon	AA
R1117	VRD-RA2EE103J	J	10k 1/4W Carbon	AA
R2302	VRD-RA2BE272J	J	2.7k 1/8W Carbon	AA
R2305	VRD-MN2BE103J	J	10k 1/8W Carbon	AA
R2319	VRD-MN2BE121J	J	120 1/8W Carbon	AA

SWITCHES

Ref. No.	Part No.	★	Description	Code
S501	QSW-B0015CEZZ	J	Vertical Center Adj.	AC
⚠ S701	QSW-P0566CEZZ	J	Power	AL
⚠ S1001	QSW-K0079GEZZ	J	Channel (+)	AB
⚠ S1002	QSW-K0079GEZZ	J	Channel (−)	AB
⚠ S1003	QSW-K0079GEZZ	J	Volume (+)	AB
⚠ S1004	QSW-K0079GEZZ	J	Volume (−)	AB
⚠ S1005	QSW-K0079GEZZ	J	Pre-Set	AB
⚠ S1006	QSW-K0079GEZZ	J	Picture Mode	AB
⚠ S1007	QSW-K0079GEZZ	J	Skip	AB

MISCELLANEOUS PARTS

Ref. No.	Part No.	★	Description	Code
CN601	QCNW-0430PEZZ	J	Connecting Wire	AC
⚠ F300	QFS-J4021GEZZ	J	IC Protector	AE
⚠ F701	QFS-C3224CEZZ	J	Fuse, T3.15A	AD
FB305	RBLN-0037CEZZ	J	Ferrite Bead	AB
FB602	RBLN-0037CEZZ	J	Ferrite Bead	AB
⚠ FB701	RBLN-0010CEZZ	J	Ferrite Bead	AC
⚠ FB702	RBLN-0037CEZZ	J	Ferrite Bead	AB
FB731	RBLN-0010CEZZ	J	Ferrite Bead	AC
⚠ FH701	QFSHD1009CEZZ	J	Fuse Holder, for F701	AA
⚠ FH702	QFSHD1010CEZZ	J	Fuse Holder, for F701	AA
⚠ J451	QJAKF0011CEZZ	J	Jack, AV Input	AG
P210	QPLGN0241CEZZ	J	Plug 2-pin, TP210	AA
P308	QPLGN0441CEZZ	J	Plug 4-pin, (S2)	AB
P501	QPLGN0241CEZZ	J	Plug 2-pin, TP501	AA
P502	QPLGN0505CEZZ	J	Plug 5-pin, (F)	AB
P601	QPLGN0207CEZZ	J	Plug 2-pin, H-Size	AA
P602	QPLGN0441CEZZ	J	Plug 4-pin, (H)	AB
P604	QPLGN0160CEZZ	J	Plug 1-pin, (CA)	AB
⚠ P711	QPLGN0207CEZZ	J	Plug 2-pin, (G)	AA
⚠ P712	QPLGN0304CEZZ	J	Plug 3-pin, (A)	AB
P801	QPLGN0541CEZZ	J	Plug 5-pin, (K)	AB
RMC1001	RRMCU0215CEZZ	J	Remote Control Receiver	AN
	LHLDP1017PE00	R	LED Holder	AB

End of PWB-A

PWB-B DUNTK7001WED4
CRT SOCKET UNIT

TRANSISTORS

Ref. No.	Part No.	★	Description	Code
Q851	VS2SC3417//1E	J	2SC3417	AC
Q852	VS2SC3417//1E	J	2SC3417	AC
Q853	VS2SC3417//1E	J	2SC3417	AC

DIODE

Ref. No.	Part No.	★	Description	Code
D851	RH-EX0271CEZZ	J	Zener Diode	AA

COIL

Ref. No.	Part No.	★	Description	Code
L851	VP-CF681K0000	J	680μH	AB

CONTROLS

Ref. No.	Part No.	★	Description	Code
R853	RVR-B4568CEZZ	J	10k (B) Red Bias	AC
R857	RVR-B5639CEZZ	J	1k (B) Green Drive	AB
R859	RVR-B4568CEZZ	J	10k (B) Green Bias	AC
R863	RVR-B5639CEZZ	J	1k (B) Blue Drive	AB
R865	RVR-B4568CEZZ	J	10k (B) Blue Bias	AC

CAPACITORS

Ref. No.	Part No.	★	Description	Code
C800	VCQYTA1HM103K	J	0.01 50V Mylar	AB
C851	VCKYPA1HB391K	J	390p 50V Ceramic	AA
C852	VCKYPA1HB391K	J	390p 50V Ceramic	AA
C853	VCKYPA1HB391K	J	390p 50V Ceramic	AA
C854	RC-KZ0150CEZZ	J	1000p 3kV Ceramic	AB
C860	VCKYD41CY103N	J	0.01 16V Ceramic	AA
C861	VCEAGA1CW106M	J	10 16V Electrolytic	AA
C865	VCKYPA1HB102K	J	1000p 50V Ceramic	AA
C866	VCEAGA2DW106M	J	10 200V Electrolytic	AC

RESISTORS

Ref. No.	Part No.	★	Description	Code
R851	VRD-RA2BE821J	J	820 1/8W Carbon	AA
R852	VRD-RA2BE272J	J	2.7k 1/8W Carbon	AA
R853	*See Controls*			
R855	VRD-RM2HD272J	J	2.7k 1/2W Carbon	AA
R856	VRD-RA2BE391J	J	390 1/8W Carbon	AA
R857	*See Controls*			
R858	VRD-RA2BE272J	J	2.7k 1/8W Carbon	AA
R859	*See Controls*			
R860	VRS-VV3DB123J	J	12k 2W Metal Oxide	AA
R861	VRD-RM2HD272J	J	2.7k 1/2W Carbon	AA
R862	VRD-RA2BE471J	J	470 1/8W Carbon	AA
R863	*See Controls*			

RESISTORS (Continued)

Ref. No.	Part No.	★	Description	Code
R864	VRD-RA2BE272J	J	2.7k 1/8W Carbon	AA
R865	*See Controls*			
R866	VRS-VV3DB123J	J	12k 2W Metal Oxide	AA
R867	VRD-RM2HD272J	J	2.7k 1/2W Carbon	AA
R868	VRS-VV3DB123J	J	12k 2W Metal Oxide	AA
R872	VRD-RA2BE681J	J	680 1/8W Carbon	AA
R873	VRD-RA2BE681J	J	680 1/8W Carbon	AA
R874	VRD-RA2BE681J	J	680 1/8W Carbon	AA
R875	VRD-RA2BE560J	J	56 1/8W Carbon	AA
R876	VRD-RA2BE560J	J	56 1/8W Carbon	AA
R877	VRD-RA2BE560J	J	56 1/8W Carbon	AA
R878	VRD-RA2BE222J	J	2.2k 1/8W Carbon	AA

MISCELLANEOUS PARTS

Ref. No.	Part No.	★	Description	Code
P851	QPLGN0461CEZZ	J	Plug 4-pin, (H)	AB
P852	QPLGN0561CEZZ	J	Plug 5-pin, (K)	AB
⚠ SC851	QSOCV0913CEZZ	J	CRT Socket	AK

—— End of PWB-B ——

MISCELLANEOUS PARTS

Ref. No.	Part No.	★	Description	Code
CN301	QCNW-1585PEZZ	R	Connecting Wire, Speaker	AH
CN852	QCNW-1595PEZZ	R	Connecting Wire, (K)	AG
SP1	VSP9050PB06WA	R	Speaker	AR
SP2	VSP9050PB06WA	R	Speaker	AR
	LHLDK0001PEZZ	R	AC Cord Holder	AC
⚠ ACC701	QACCZ3003PEZZ	R	AC Cord	AQ

—— End of MISCELLANEOUS PARTS ——

Ref. No.	Part No.	★	Description	Code

SUPPLIED ACCESSORIES

ACCESSORIES

QANTR0018PEZZ	R	Rod Antenna, Dipole	AQ
QPLGA0011CEZZ	J	AC Plug Adapter	AF
QPLGJ0113CEZZ	J	Antenna Plug	AG
RRMCG0999PESA	R	Infrared Remote	AW
or		Control Unit	
RRMCG1077PESA	R		

ACCESSORIES (*NOT REPLACEMENT ITEM*)

TINS-5225PEZZ	–	Operation Manual	—
TMAPC3899PEZZ	–	Service Map	—
UBATU0023GEZZ	–	Dry Batteries, Size AAA (2 pcs.)	—

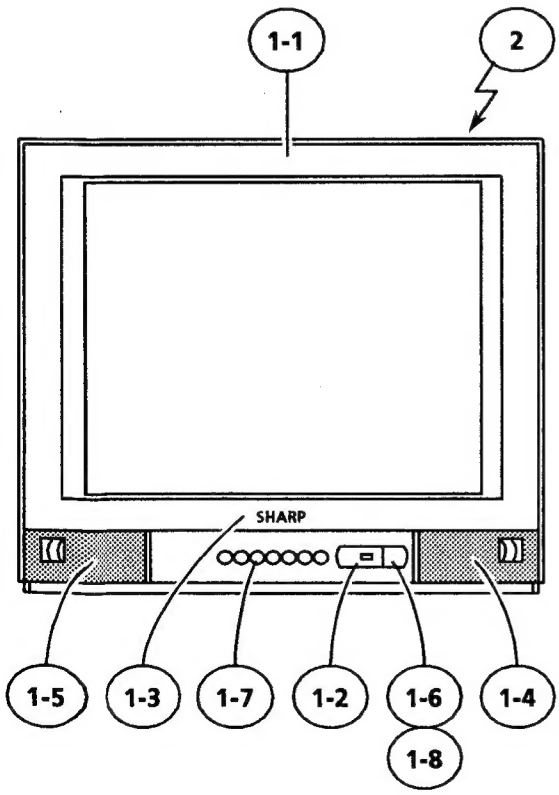
—— End of SUPPLIED ACCESSORIES ——

Ref. No.	Part No.	★	Description	Code

PACKING PARTS
(*NOT REPLACEMENT ITEM*)

SPAKC5841PEZZ	–	Packing Case	—
SPAKP0055PEZZ	–	Polystyrene Mat	—
SPAKX0393PEZZ	–	Packing Material	—
TLABK0002PEZZ	–	Number Card	—

—— End of PACKING PARTS ——



CABINET PARTS

1	CCABA2215WEV0	R	Cabinet Ass'y, Front	BL
1-1	*Not available*	–	Cabinet, Front	—
1-2	GMADT0123PESA	R	Window Cover	AF
1-3	HBDGB3101CESB	J	Badge, "SHARP"	AG
1-4	*Not available*	–	Punching Plate, Right	—
1-5	*Not available*	–	Punching Plate, Left	—
1-6	JBTN-0117PESA	R	Button, Power	AE
1-7	JBTN-0118PESA	R	Buttons, Up/Down Controls	AG
1-8	MSPRC0068CEFW	J	Spring, Power Button	AA
2	CCABB2174WEV0	R	Cabinet Ass'y, Rear	BD

—— End of CABINET PARTS ——

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